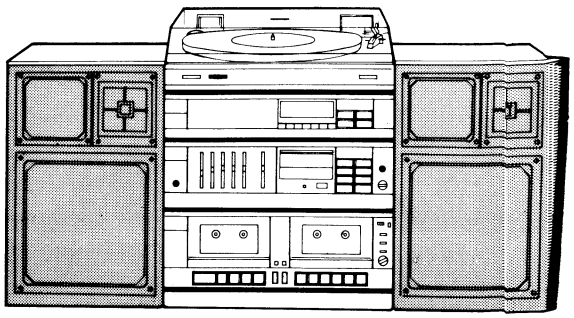
GoldStar

COMPONENT SYSTEM SERVICE MANUAL

CAUTION
BEFORE SERVICING THE CHASSIS, READ THE "SAFETY PRECAUTIONS", IN THIS MANUAL

MODEL: GSA-5300
GST-5300
GSW-5300



MODEL: CS-5300

GoldStar

CONTENTS

GSA-5300

SPECIFICATIONS 3
BLOCK DIAGRAM 4
SCHEMATIC DIAGRAM 5
PCB LAYOUT 6
WIRING DIAGRAM 7
IC INTERNAL DIAGRAM 8
EXPLODED VIEW 10
REPLACEMENT PARTS LIST
- ELECTRICAL 11
- CABINET 12

GST-5300

SPECIFICATIONS 13
ADJUSTMENT 14
BLOCK DIAGRAM 18
SCHEMATIC DIAGRAM 19
PCB LAYOUT 20
WIRING DIAGRAM 21
IC INTERNAL DIAGRAM 22
EXPLODED VIEW 23
REPLACEMENT PARTS LIST
- ELECTRICAL 24
- CABINET 25

GSW-5300

SPECIFICATIONS 26
ADJUSTMENT 27
STANDARD MAINTENANCE 32
BLOCK DIAGRAM 33
SCHEMATIC DIAGRAM 34
PCB LAYOUT 35
WIRING DIAGRAM 36
IC INTERNAL DIAGRAM 37
EXPLODED VIEW
- CABINET 38
- DECK MECHANISM 39

REPLACEMENT PARTS LIST
- ELECTRICAL 40
- CABINET 41
- DECK MECHANISM 42

SAFETY PRECAUTION

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual, electrical components having such features are identified by a ⚠ in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

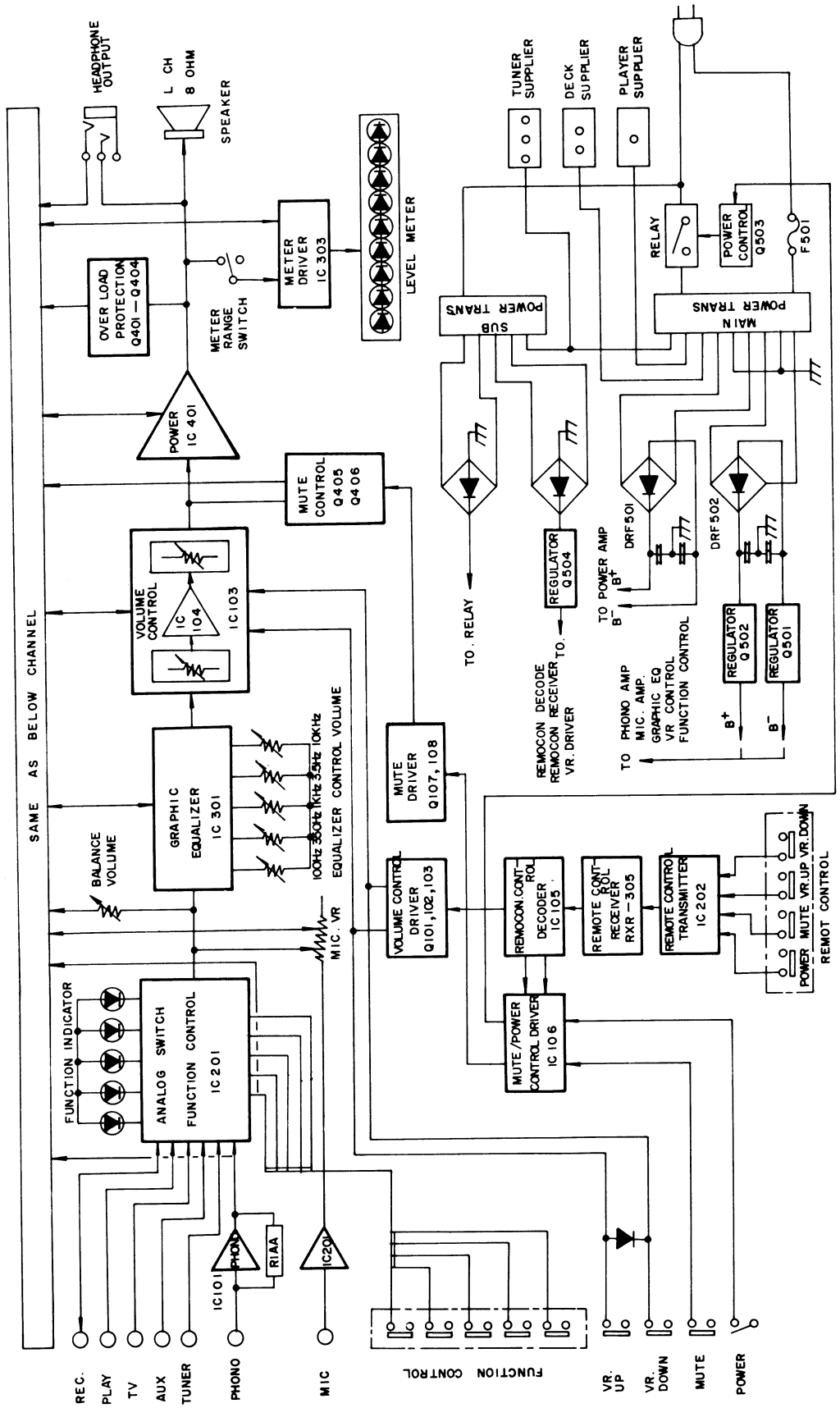
INTEGRATED AMPLIFIER
GSA-5300

SPECIFICATIONS

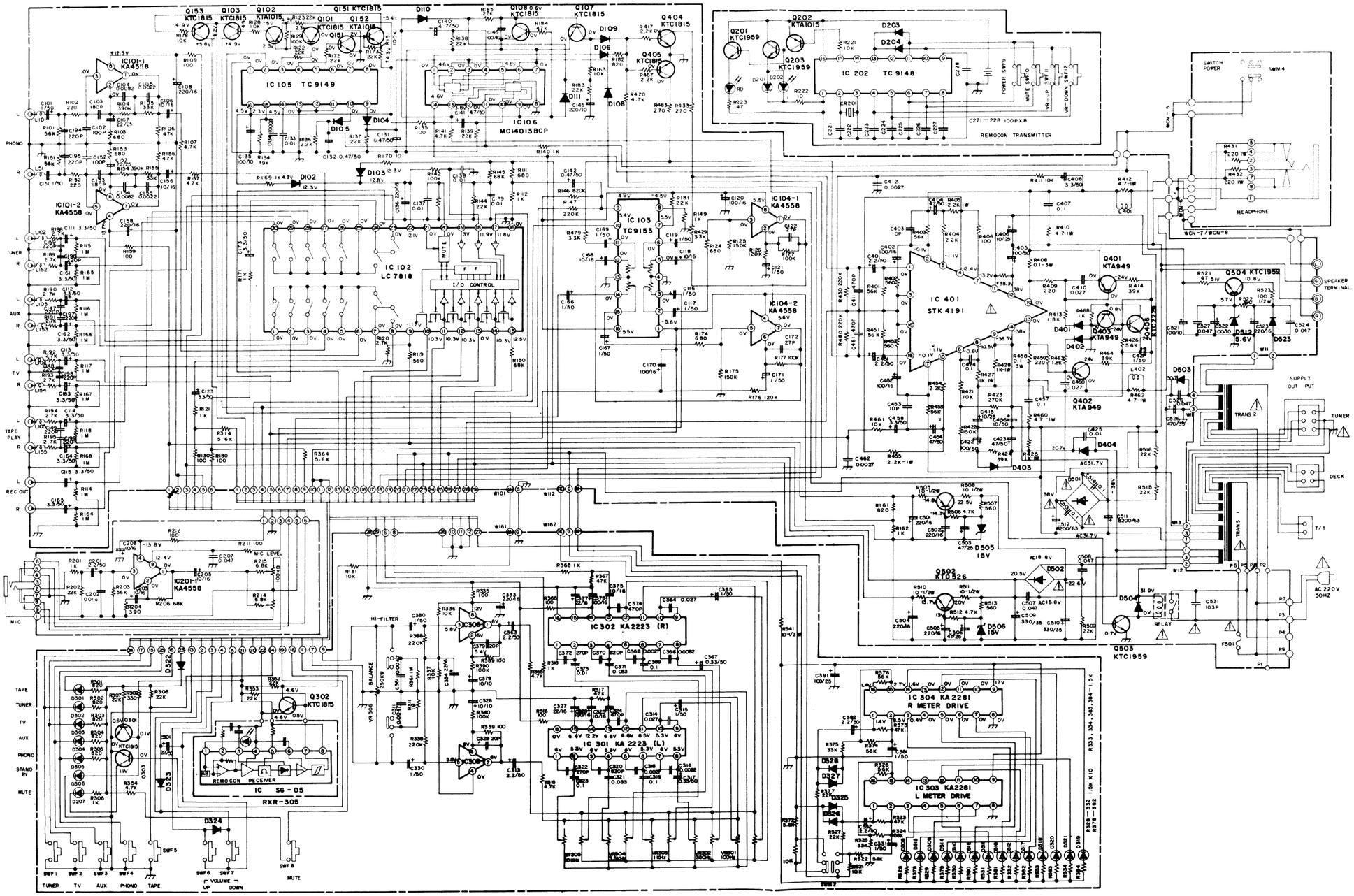
Out Power	50W RMS
THD	0.3%
Frequency Response	20—30KHz
Signal/Noise Ratio IHF/A Curve	
Phono	70dB
Others	88dB
Graphic Equalizer	
100/350/1K/3.5K/10KHz	± 10dB
Power Source	AC 220V, 50Hz
Power Consumption	175W
Dimensions (W × H × D)	345 × 107 × 280(mm)
Weight	6.0Kg

* Minimum continuous RMS output power per channel, both channels driven into 8 ohms from 20Hz to 20,000Hz with no more than rated THD.

BLOCK DIAGRAM

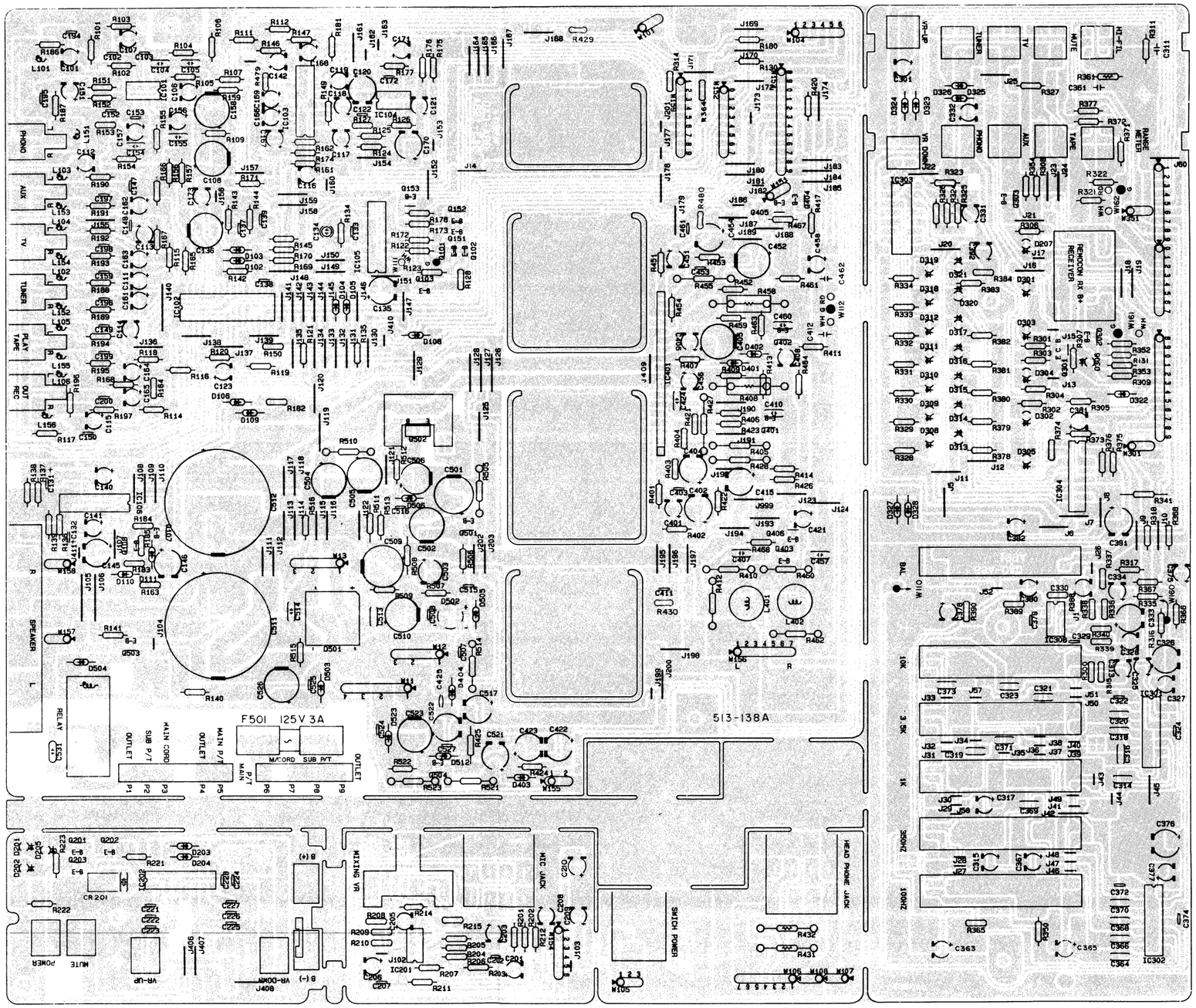


SCHEMATIC DIAGRAM

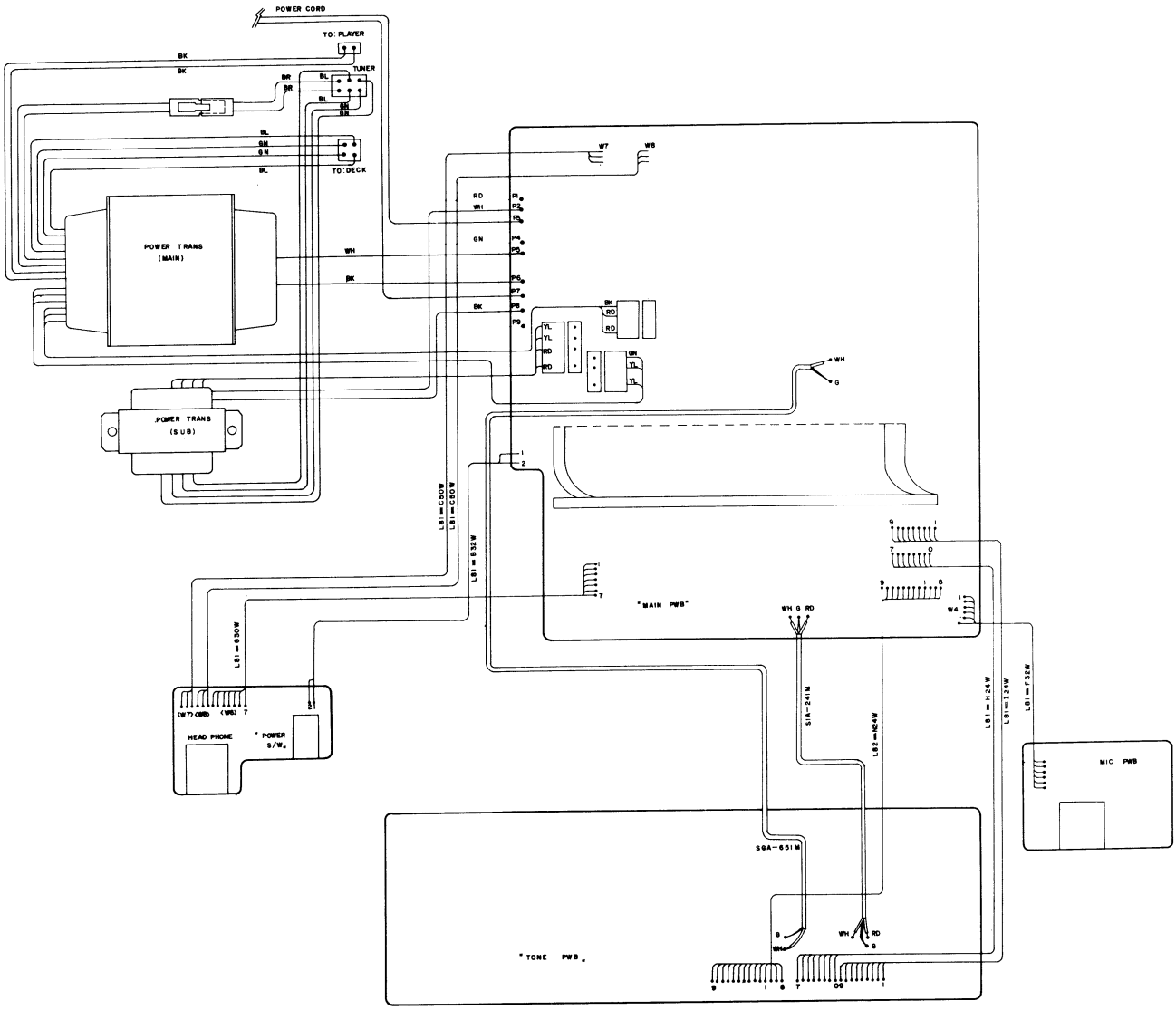


NOTES : 1. ALL RESISTANCE VALUES ARE INDICATED IN "Ω" (K=10³, M=10⁶ Ω)
2. ALL CAPACITANCE VALUES ARE INDICATED IN "μF" (P=10⁻⁶μF)
3. THIS SCHEMATIC DIAGRAM MAY BE CHANGED WITHOUT NOTICE FOR IMPROVEMENT OF PERFORMANCE

PCB LAYOUT

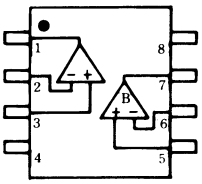

F501 125V 3A
513-138A
RELAY
SPEAKER
MAIN CORD
SUB P/T
MAIN P/T
OUTLET
MIXING VR
MIC JACK
HEAD PHONE JACK
SWITCH POWER
POWER
MUTE
VR-UP
VR-DOWN
CR201
RECTIFIER

WIRING DIAGRAM

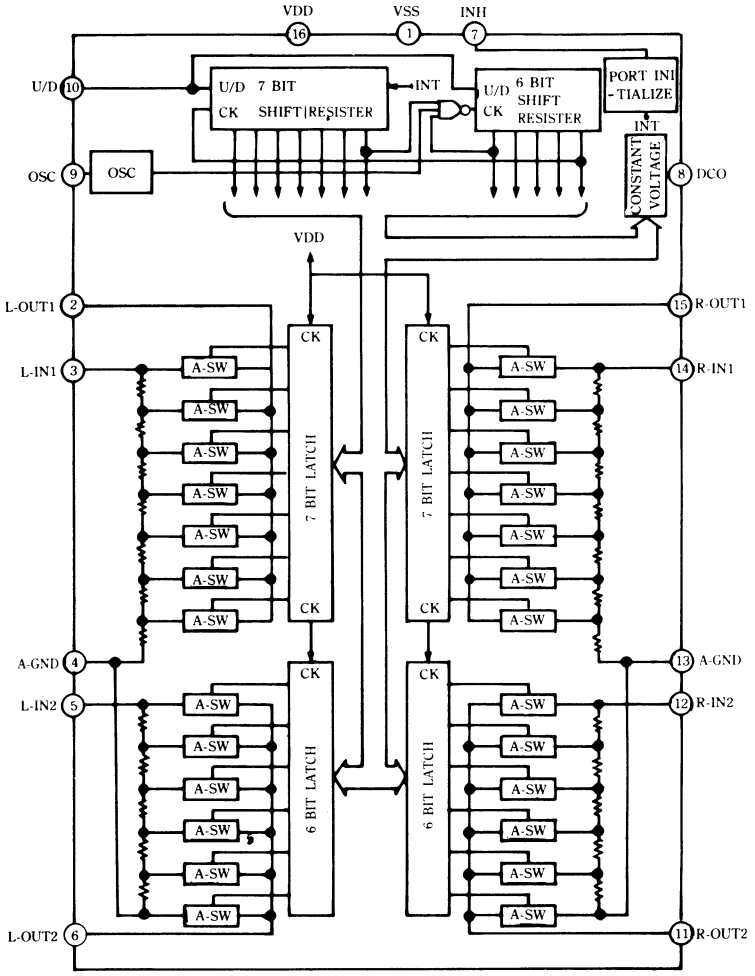


IC INTERNAL DIAGRAM

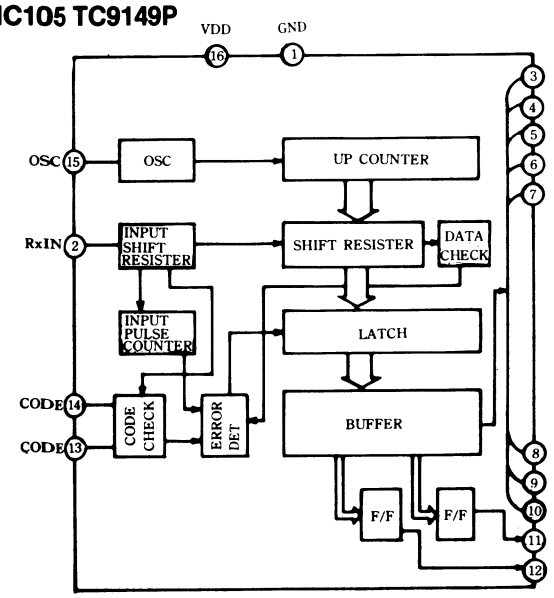
IC101, 104, 201, 308 KA4558



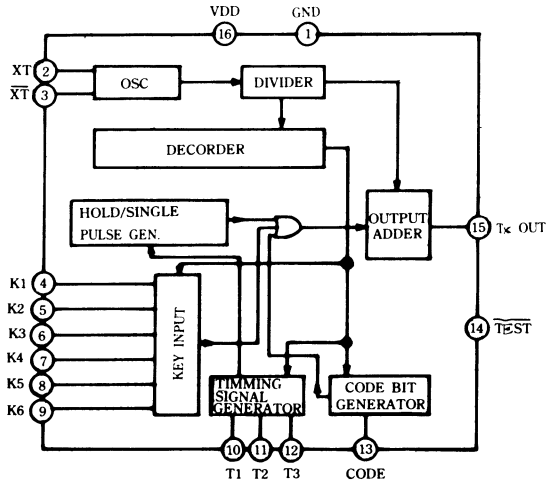
IC103 TC9153AP



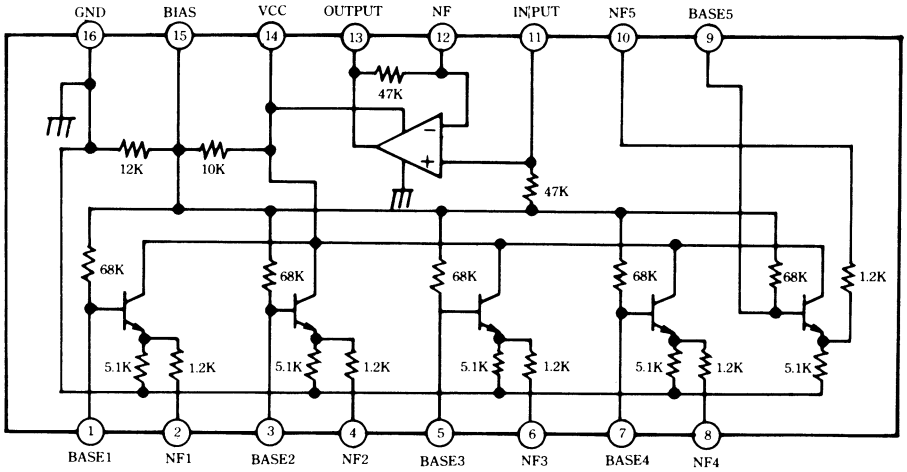
IC105 TC9149P



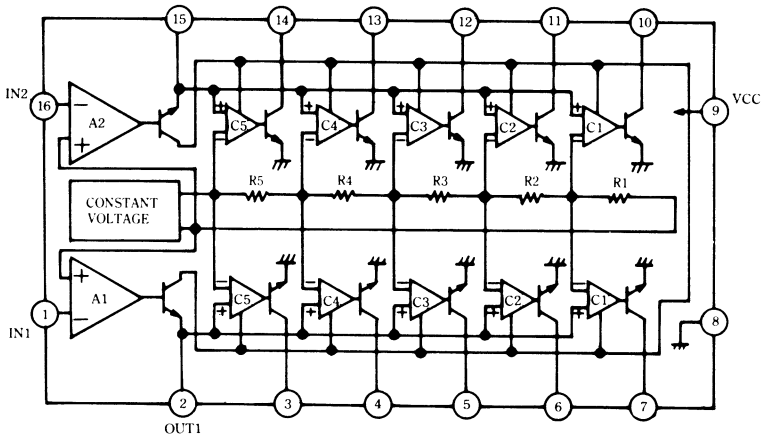
IC202 TC9148P



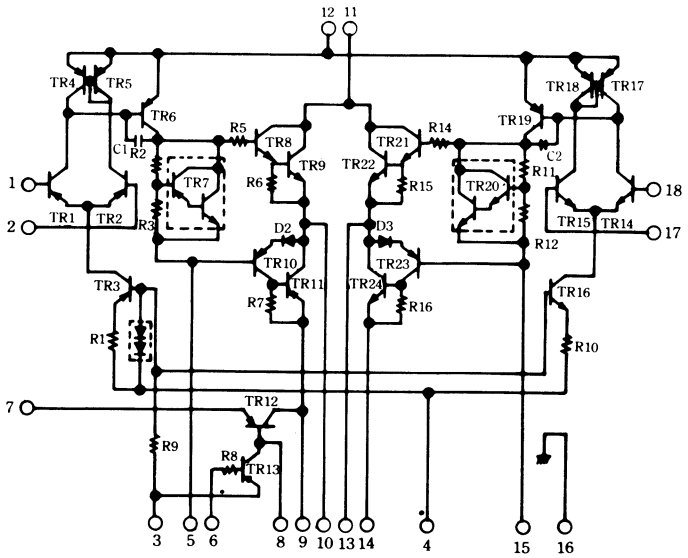
IC301, 302 KA2223



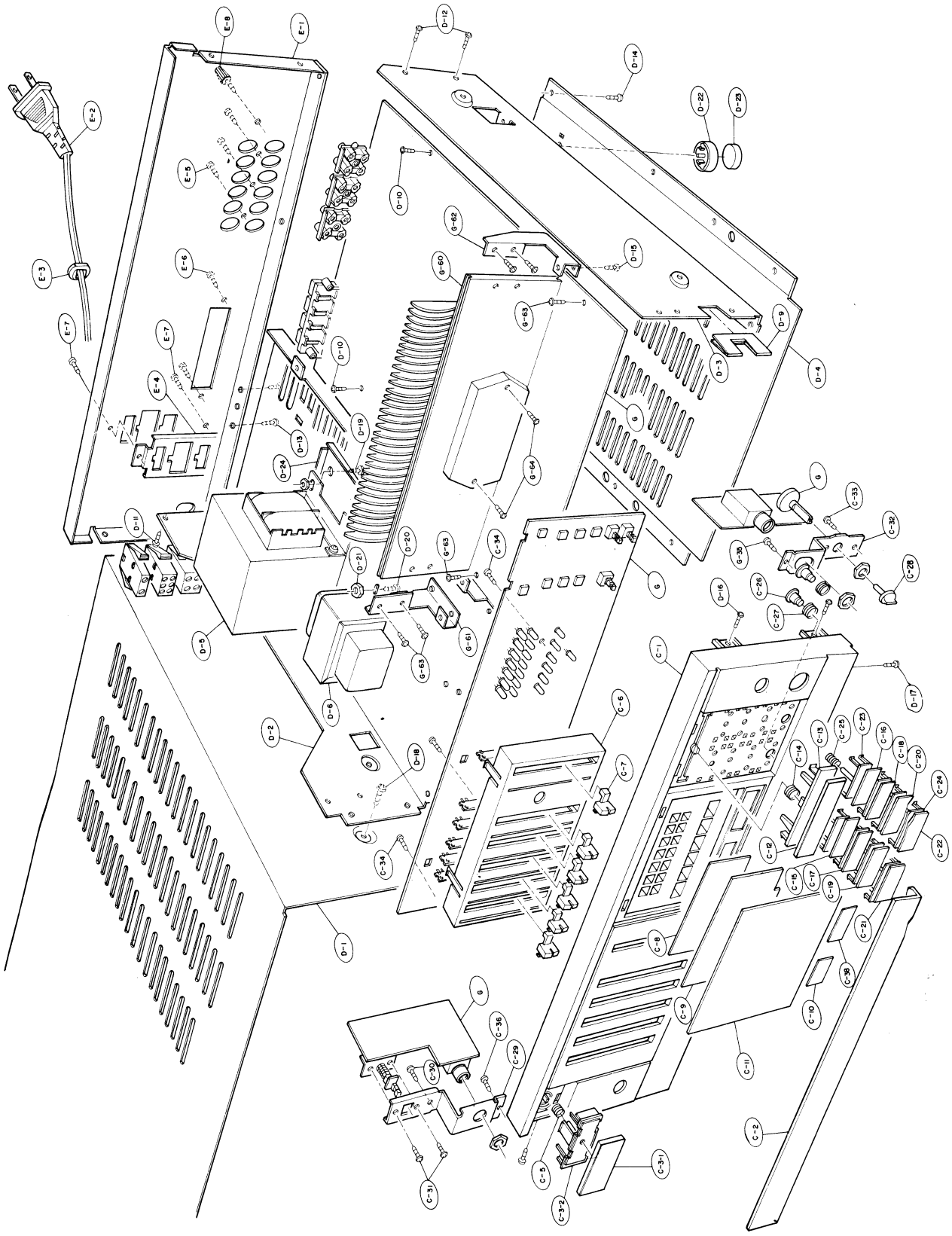
IC303, 304 KIA7666P



IC401 STK4191



EXPLODED VIEW



REPLACEMENT PARTS LIST

PRODUCT SAFETY NOTICE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the safety precaution of this service manual, don't degrade the safety of the receiver through improper servicing.

NOTE: "R" marked parts at the remark mean parts which are the serviceable parts.
"S" marked parts at the remark mean parts which are the spare parts and the serviceable parts.

• **ELECTRICAL**

Location No.	Part No.	Description	Remark
INTEGRATED CIRCUITS			
IC101	668-051D	KA4558-OP Amp	S
IC102	668-661C	LC7818-Function	S
IC103	668-681A	TC9153AP-Electronic Volume	S
IC104	668-051D	KA4558-OP Amp	S
IC105	668-090B	TC9149P-Function	S
IC106	668-057A	MC14013BCP-D Flip Flop	S
IC201	668-051D	KA4558- OP Amp	S
IC202	668-089B	TC9148P-Function	S
IC301, 302	668-655D	KA2223-5 Dot G EQ	S
IC303, 304	668-673A	KIA7666P-LED Driver	S
IC308	668-051D	KA4558-OP Amp	S
IC401	668-561C	STK4191-Power	S
XR305	668-090C	SG05-Remocon Modulation	S
TRANSISTORS			
Q101	665-812B	KTC1815-Y	S
Q102	665-813C	KTA1015-GR	S
Q103	665-812B	KTC1815-Y	S
Q107	665-812B	KTC1815-Y	S
Q108	665-812B	KTC1815-Y	S
Q151	665-812B	KTC1815-Y	S
Q152	665-813C	KTA1015-GR	S
Q153	665-812B	KTC1815-Y	S
Q201	665-814B	KTC1959-Y	S
Q202	665-813C	KTA1015-GR	S
Q203	665-814B	KTC1959-Y	S
Q301-303	665-812B	KTC1815-Y	S
Q401-403	666-421A	KTA949-0	S
Q404, 405	665-812B	KTC1815-Y	S
Q406	665-834A	KTC2229-0	S
Q501	664-602C	KTB834-Y	S
Q502	665-708B	KTD526-Y	S
Q503, 504	665-814B	KTC1959-Y	S
DIODES			
D102-106	652-605B	Switch, IS2472	S
D108-111	652-605B	Switch, IS2472	S
D201	653-642A	LED, EL-1L1	S
D202	653-642B	LED, EL-1L2	S
D203, 204	652-605B	Switch, IS2472	S
D205	653-617A	LED, SLC-26UR RD	S
D207	653-636A	LED, SLR54URC3-M RD	S
D301-305	653-636D	LED, SLR54GC3-P	S
D306	653-636A	LED, SLR54URC3-M RD	S
D308-317	653-636D	LED, SLR54GC3-P	S
D318-321	653-636A	LED,SLR54URC-3-M RD	S
D322-328	652-605B	Switch, IS2472	S
D401-403	652-605B	Switch, IS2472	S
D404	652-005C	Rect, DS4001	S
D410	654-724C	Zener, DZ13B	S
D501	652-611A	Rect, KBPC604	S
D502	652-013A	Rect, W005M	S ⚠
D503, 504	652-005C	Rect, DS4001	S
D505, 506	654-724D	Zener, DZ15B	S
D512	654-723A	Zener, DZ5.6B	S
D523	652-005C	Rect, DS4001	S
MISCELLANEOUS			
VR301-305	612-610W	VR, 50KW-G EQ	S
VR306	612-610V	VR, 250KW-Balance	S
	611-649I	VR, 100KB-Mic Mixing	S
SWF1-12	558-908A	SW, KH10902	R
SWH1	554-633A	SW, SEA12A-Hi Filter	S
SWH2	554-633A	SW, SEA12A-Meter	S
	554-624J	SW, SUN12-Power	S
	572-134A	Jack, D = 6.4-Mic	S
	572-059D	Jack, D = 6.4-Headphone	S
	576-002A	Jack, Block S-437P	R
	557-010A	Relay, VS24MB-Power On/Off	R ⚠
	561-100B	Speaker Terminal	R
F501	585-512A	Fuse, 250V 1.6V	S ⚠
	586-001C	Fuse Clip 5 x 20	R
CR201	616-020B	Resonator Ceramic CSB455	S
	636-603B	Coil, Choke 2.7uH	R

• CABINET

Location No.	Part No.	Description	Remark	Location No.	Part No.	Description	Remark
C-1	258-501A	Panel, Front	S	D-4	256-615	Plate, Bottom	S
C-2	246-550B	Decoration, Front	S	D-5	641-733 C	Trans, Power (Main)	S ⚠
C-3	273-529I	Power Knob Ass'y	S	D-6	641-732 C	Trans, Power (sub)	S ⚠
C-3-1	273-800I	Knob, Power	S	D-9	221-531A	Cover, Insulation	S
C-3-2	324-331B	Holder, Power Knob	S	D-10	TRQ1830J	Screw, TRQ2 + 3 × 6A	
C-5	442-634X	Spring, Power Knob	S	D-11	TBQ1830J	Screw, TBQ + 3 × 6	
C-6	324-552A	Holder, Slide Knob	S	D-12	TBQ1830J	Screw, TBQ + 3 × 6	
C-7	273-550A	Knob, Slide Volume	S	D-13	TRQ1830J	Screw, TRQ2 + 3 × 6	
C-8	231-561I	Sheet, Display	S	D-14	TRQ1830J	Screw, TRQ2 + 3 × 6A	
C-9	236-550A	Window, Inner	S	D-15	TRQ1830J	Screw, TRQ2 + 3 × 6A	
C-10	231-561J	Sheet, Display	S	D-16	TRQ1830J	Screw, TRQ2 + 3 × 6A	
C-11	236-551A	Window, L.E.D.	S	D-17	TCQ1830J	Screw, Tapping TC3+3×6	
C-12	273-510I	Knob, Decoration	S	D-18	353-633A	Screw, Special	S
C-13	324-553A	Holder, Tuning	S	D-19	TRQ2241K	Screw, TRQ + 4 × 12	
C-14	442-635A	Spring, Knob	S	D-20	MRC1836J	Screw, MRC + 3 × 8	
C-15	273-530A	Knob, Decoration (Phono)	S	D-21	NHA1800J	Nut, NH1-3	
C-16	273-530B	Knob, Decoration (Tuner)	S	D-22	265-027A	Foot	R
C-17	273-530C	Knob, Decoration (CD/AUX)	S	D-23	472-610B	Felt	
C-18	273-530D	Knob, Decoration (TV/VCR)	S	D-24	321-001A	Bracket, Power Trans	S
C-19	273-530E	Knob, Decoration (Tape)	S	E-1	258-500B	Panel, Back	S
C-20	273-530F	Knob, Decoration (Mute)	S	E-2	681-004F	Power Cord	S
C-21	273-530G	Knob, Decoration (Meter)	S	E-3	324-348A	Holder, Cord	S
C-22	273-530H	Knob, Decoration (Hi-Filter)	S	E-4	321-997A	Bracket, Connector	S
C-23	324-510A	Holder, Knob (A)	S	E-5	TRQ18391I	Screw, TRQ253 × 10A	
C-24	324-511A	Holder, Knob (B)	S	E-6	TRQ1839I	Screw, TRQ253 × 10A	
C-25	442-634G	Spring, Knob	S	E-7	TRQ1830I	Screw, TRQ2 + 3 × 6A	
C-26	324-551A	Holder, Push	S	E-8	353-055A	Screw, Special	S
C-27	442-634W	Spring, Power Knob	S	G	511-138A	PCB Ass'y, Main	R
C-28	273-513F	Knob, Rotary	S	G-9	255-561A	Heat Sink	
C-29	321-917A	Bracket, Phone Jack	S	G-18	TRQ1830J	Screw, TRQ2 + 3 × 6A	
C-30	353-025G	Screw, Special	S	G-53	255-074A	Heat Sink	
C-31	MRC1830J	Screw		G-54	MRC1843J	Screw, MRC + 3 × 14	
C-32	321-999A	Bracket, MIC Jack	S	G-55	NHA1800J	Nut, NH1-3	
C-33	353-025G	Screw, Special	S	G-60	255-500B	Heat Sink	
C-34	353-025G	Screw, Special	S	G-61	321-998A	Bracket, Heat Sink-L	S
C-35	353-025F	Screw, Special	S	G-62	321-998B	Bracket, Heat Sink-R	S
C-36	353-025F	Screw, Special	S	G-63	TRQ1830J	Screw, TRQ2 + 3 × 6A	
C-38	231-561K	Sheet, Remote		G-64	TRQ1844J	Screw, TRQ2 + 3 × 16	
D-1	213-500A	Cabinet	S				
D-2	313-525B	Chassis, Main	S				
D-3	315-511B	Frame, Side	R				

SYNTHESIZER TUNER

GST-5300

SPECIFICATIONS

FM RADIO

Tuning Range	87.9 to 107.9MHz
Usable Sensitivity Mono 3% THD	
Mono 3% THD	11.2dBf
Stereo 3% THD	19.2dBf
Image Rejection	70dB
Distortion	
Mono	0.15%
Stereo 1kHz	0.2%
Stereo Separation	50dB

AM RADIO

Tuning Range	552 to 1611KHz
Usable Sensitivity	300uV/m
Image Rejection	35dB
Distortion	1%

GENERAL

Power Source	AC 3/15/24 Volt (0.1/0.4/0.1A MAX)
Dimension (W × H × D)	345 × 72 × 280 (mm)
Weight	2.6Kg

ALIGNMENT INSTRUCTIONS

EQUIPMENT NEEDED:

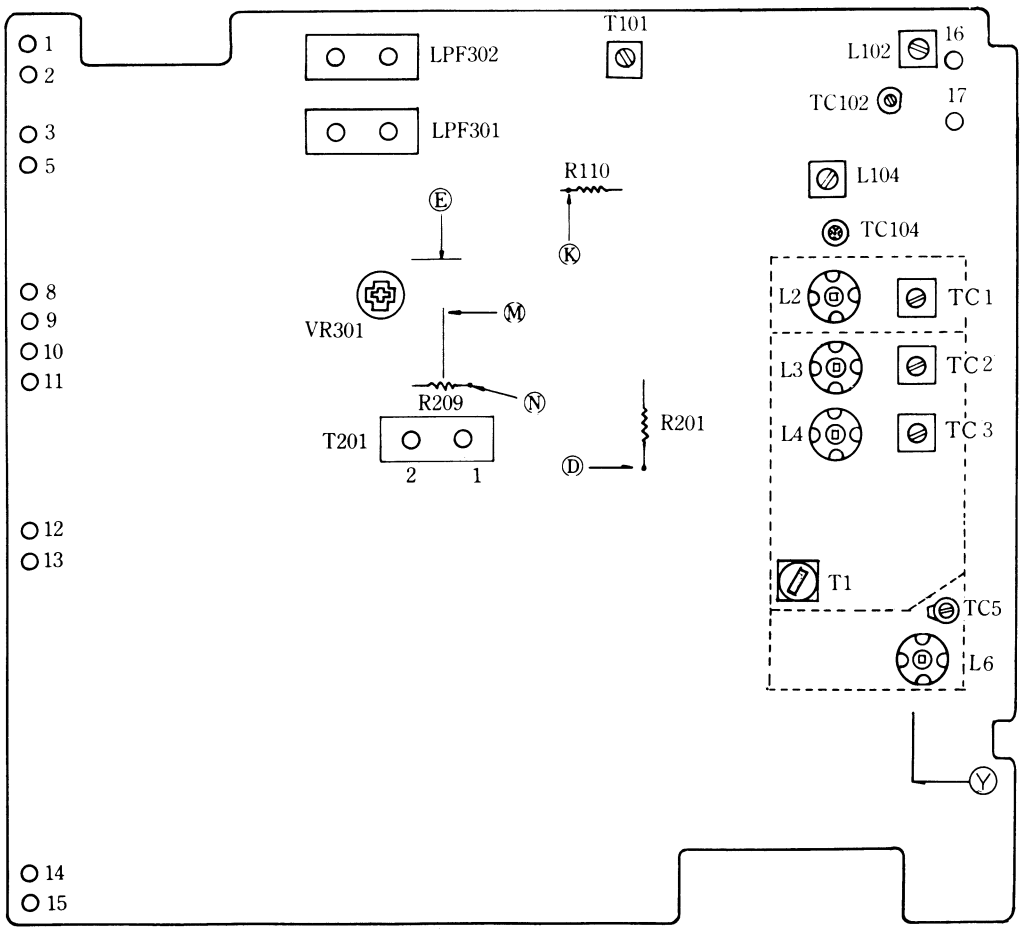
1. AM Signal Generator
2. FM Signal Generator
3. AM/FM IF Genescope
4. Oscilloscope
5. VTVM
6. Test loop antenna (AM Adjustment)
7. Dummy antenna (FM Adjustment)
8. Stereo signal modulator
9. Frequency counter

IMPORTANT

1. Check power-source voltage.
2. Set the function switch to band being aligned.
3. Keep the signal input as low as possible to adjust accurately.
4. Modulation and modulation frequency:

Item / Band	Modulation	Modulation frequency.
AM	1kHz	30%
FM	1kHz	100% (75kHz Dev.)

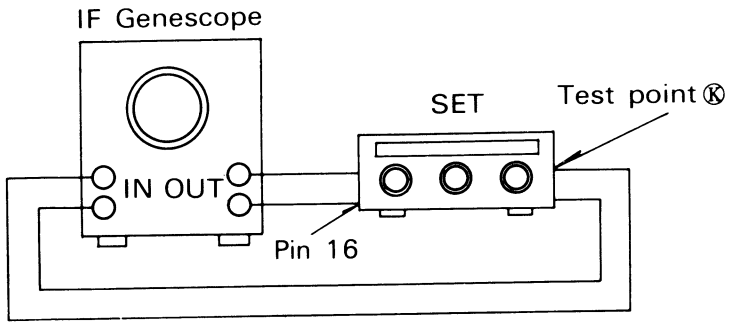
TEST AND ADJUSTMENT POINT



MAIN P.C BOARD

AM IF ADJUSTMENT

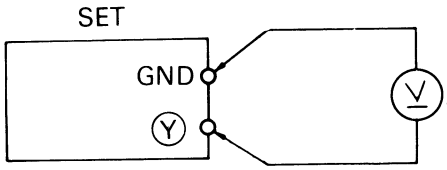
IF Genescope. . . . . The input connects to the test point "(K)", the output connects to pin 16.
Adjust for the IF wave form of Genescope to be maximum.



IF	Adjust for	Adjustment
450kHz	Maximum	T101

AM RF ADJUSTMENT (Cover range & Tracking)

DC Volt Meter . . . . . Connect to GND and VCO test point "(Y)"



(Cover range voltage alignment connection diagram)

NO.	Frequency	Adjust for	Adjustment
1	522kHz	2V	L104
2	1611kHz	24.5V	TC104
3	Repeat steps 1 and 2 several times		
4	603kHz	Maximum sensitivity	L102
5	1404kHz	Maximum sensitivity	TC102
6	Repeat steps 4 and 5 several times		

FM IF ADJUSTMENT

IF Genescope. . . . . The input connects to the test point "(E)", the output connects to "(D)"
DC Volt Meter. . . . . Connect to test point "(M)" and "(N)" (Both side R209).

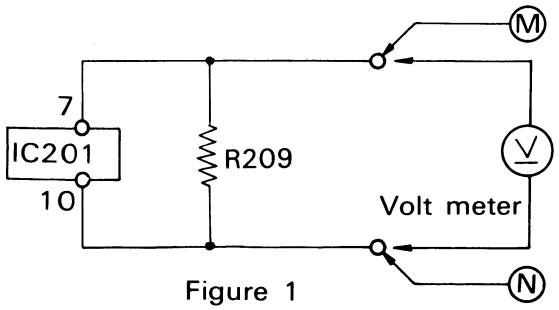
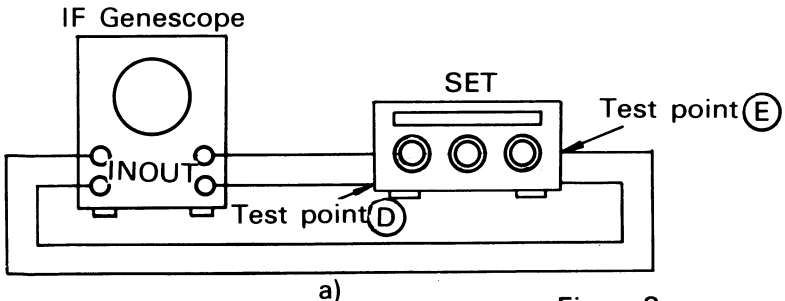
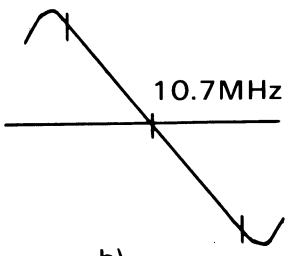


Figure 1

No.	Adjust for	Adjustment	Remark
1	0V	T201-1	See figure 1.
2	Maximum linear S curve	T201-2	See figure 2-(a), (b)



a)

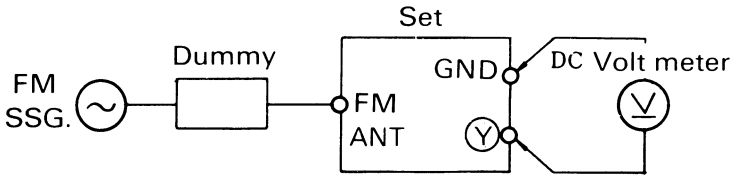


b)

Figure2

FM RF (Cover range & Tracking)

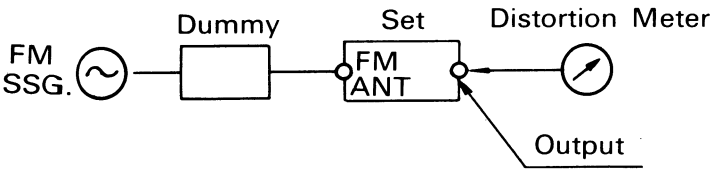
Signal Generator ..... Connect to FM Ant through the dummy.
DC Volt Meter..... Connect to VCO test point "Ⓨ" and GND



NO.	Frequency	Adjust for	Adjustment
1	87.9MHz	4.5V	L6
2	107.9MHz	24.5V	TC5
3	Repeat steps 1 and 2 several times.		
4	90.1MHz	Maximum sensitivity	L2, L3, L4
5	106.1MHz	Maximum sensitivity	TC1, TC2, TC3
6	Repeat steps 4 and 5 several times.		

FM T.H.D. ADJUSTMENT

Signal Generator ..... Connect to FM Ant (Pin 18) through the dummy.
Distortion Meter..... Connect to the output

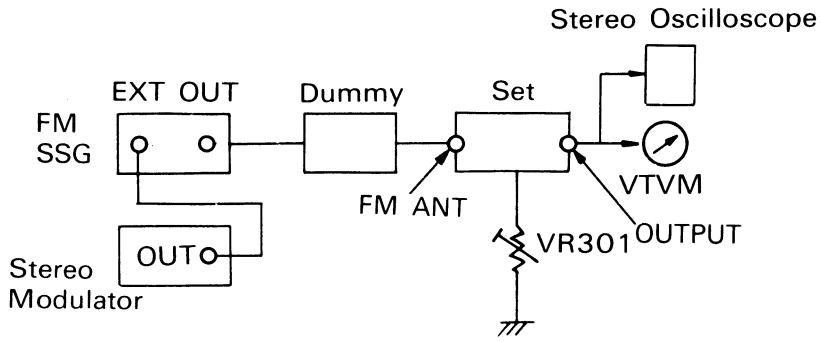


NO.	Frequency	Adjust for	Adjustment
1	98.1MHz	Minimum T.H.D.	T201-1

NOTE: At this time, the DC voltage between test point "Ⓜ" and "Ⓝ" should be realigned by T201-2 to keep on 0 voltage, because the "S" curve may be detuned.

(Using Frequency Counter, adjust it's point until indicating 98.1MHz exactly.)

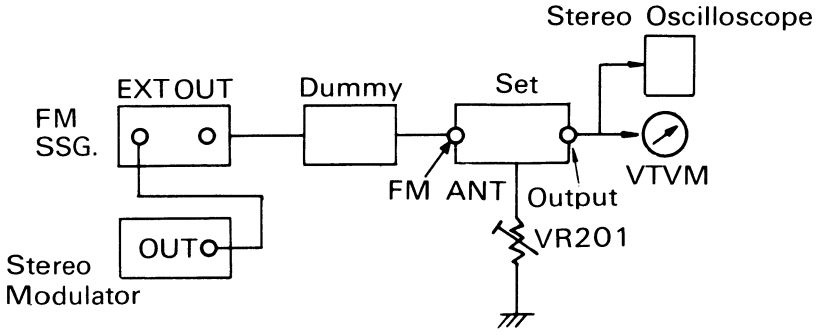
FM MPX ADJUSTMENT—SEPARATION



Pilot Signal	Adjust for	Adjustment
On	Difference of R and L must be maximum	VR301

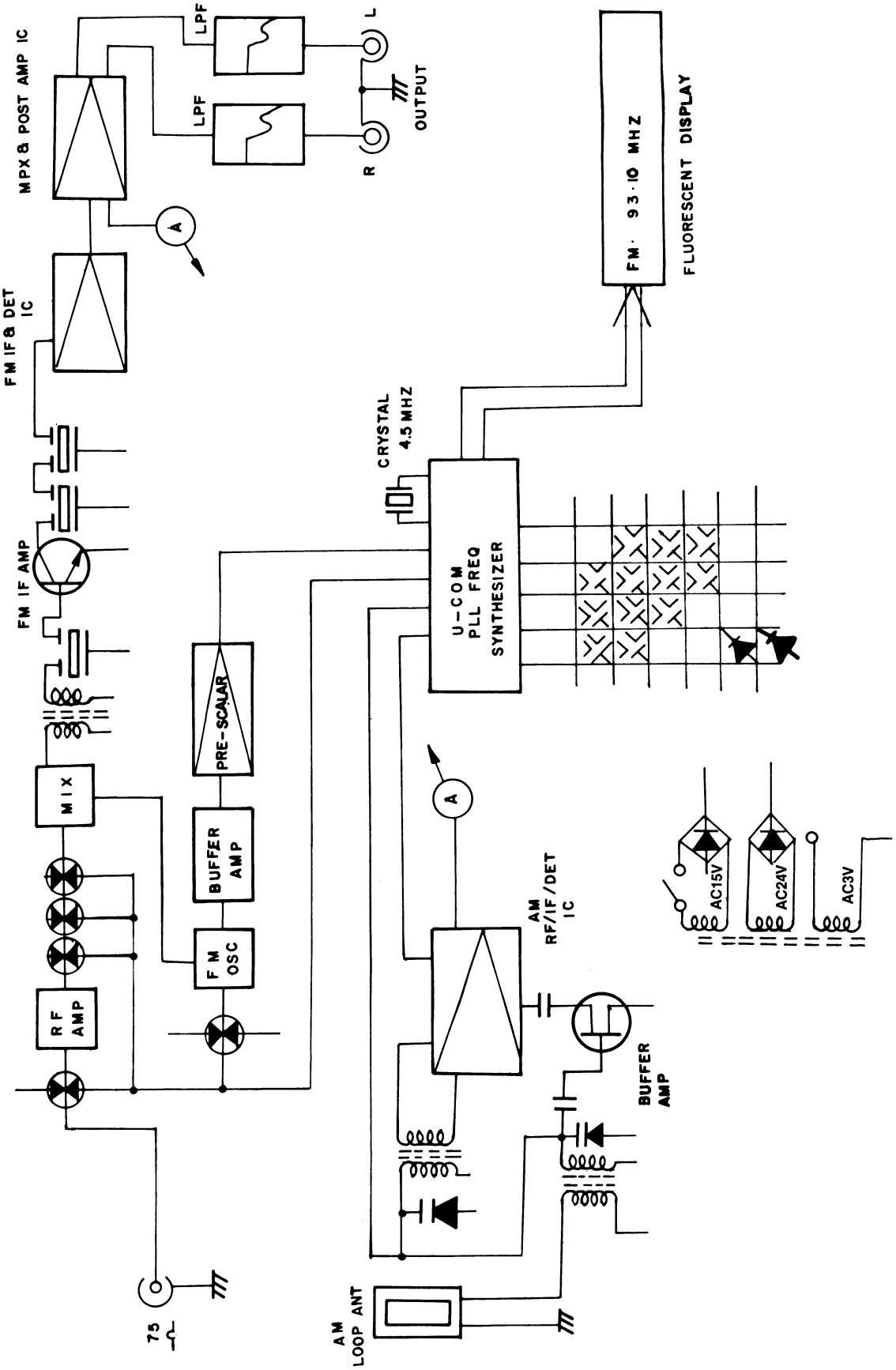
NOTE: In case of adjusting the stereo separation, if input is L (or R) channel, R (or L) channel must be minimum.

FM STEREO BEACON SENSITIVITY & AUTO SEARCH LEVEL ADJUSTMENT

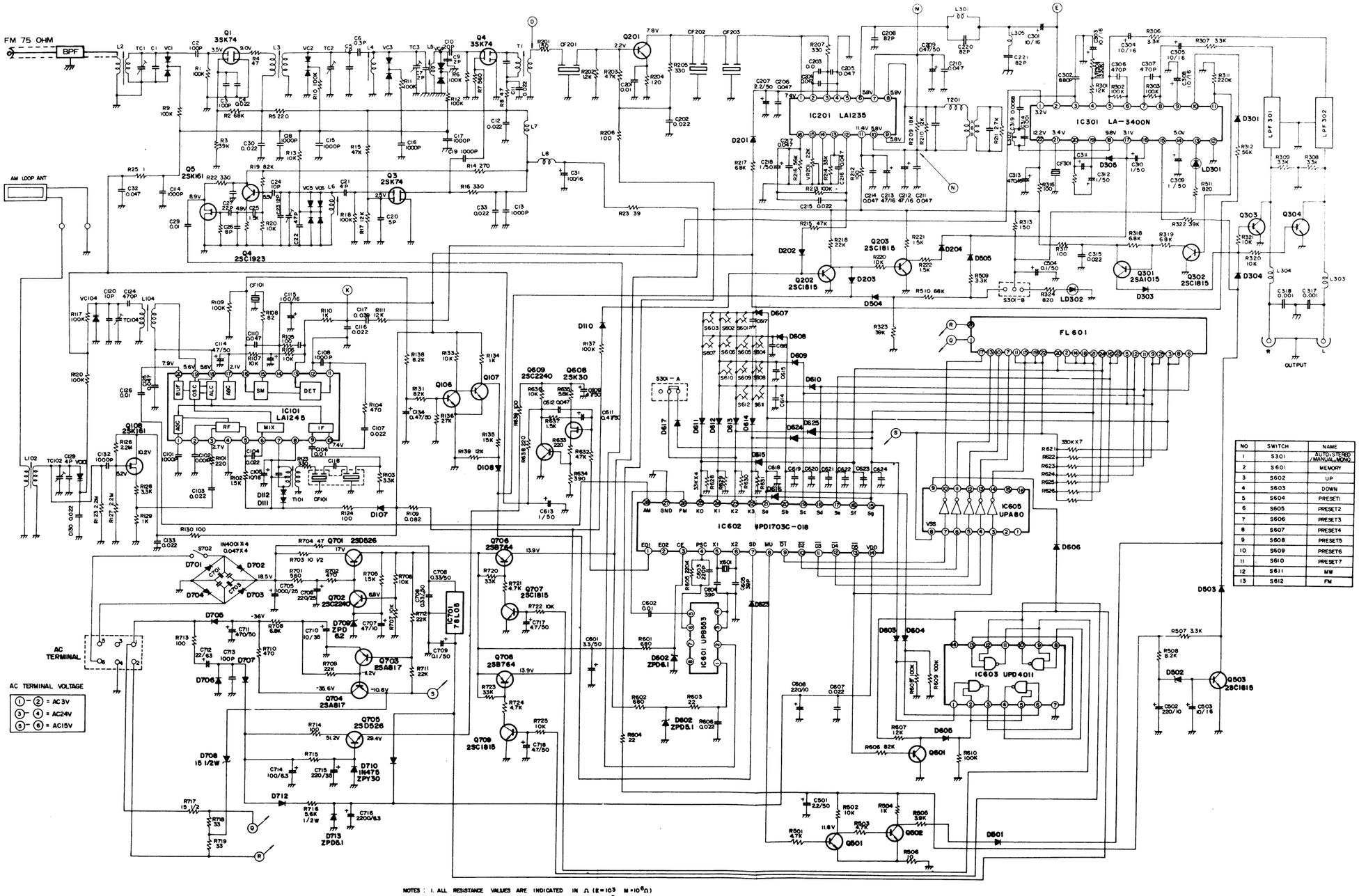


	Pilot signal	Imput of FM ANT	Adjust for	Adjustment
FM Stereo Beacon Sensitivity	ON	5uV	ST LED Lamp-ON	VR201
Auto Search Level		19dB (FM) 35dB (AM)	Lamp —ON	

BLOCK DIAGRAM



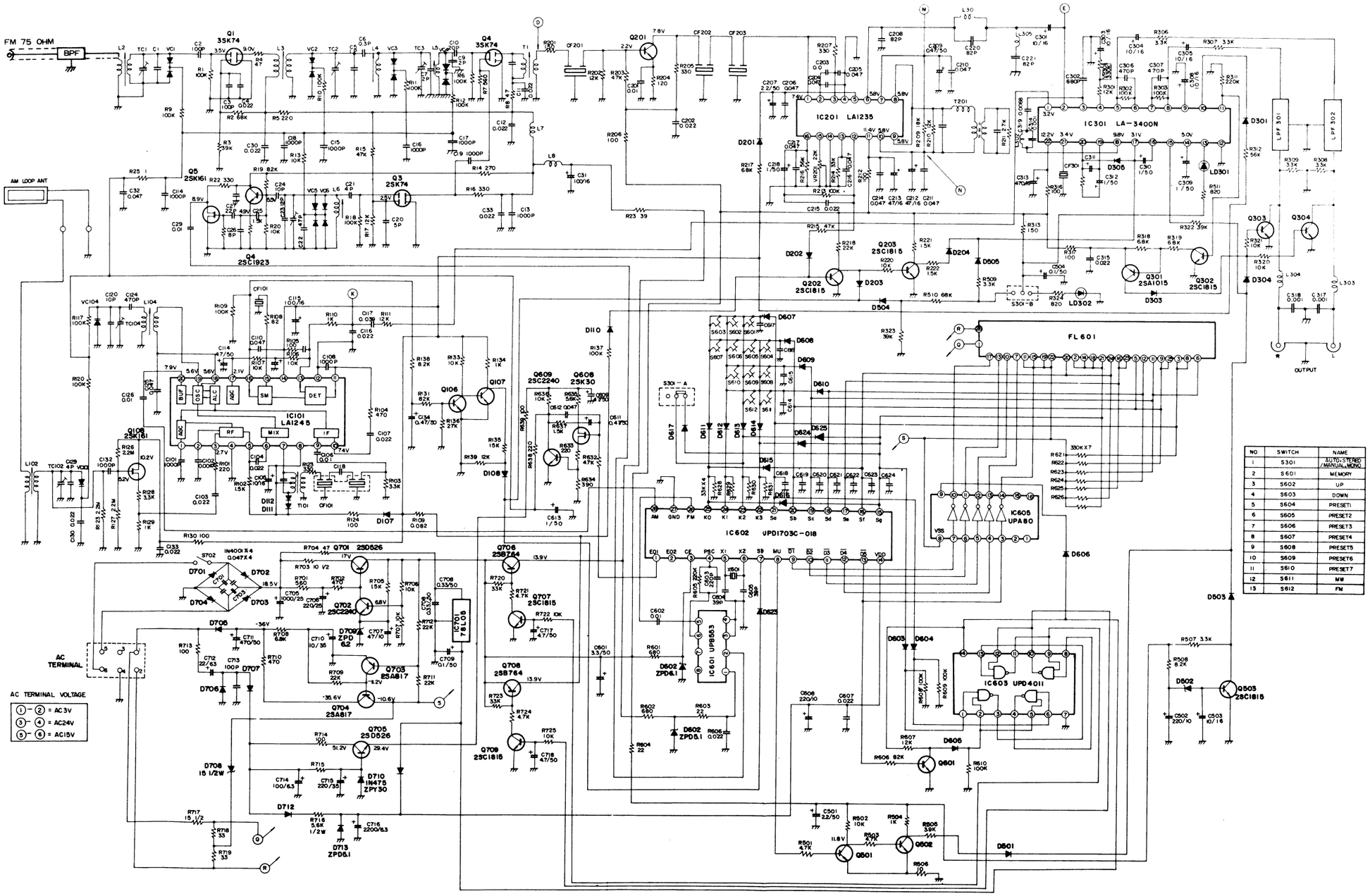
SCHEMATIC DIAGRAM



NO	SWITCH	NAME
1	S301	AUTO-STEREO / MANUAL-MONO
2	S601	MEMORY
3	S602	UP
4	S603	DOWN
5	S604	PRESET1
6	S605	PRESET2
7	S606	PRESET3
8	S607	PRESET4
9	S608	PRESET5
10	S609	PRESET6
11	S610	PRESET7
12	S611	MW
13	S612	FM

NOTES : 1. ALL RESISTANCE VALUES ARE INDICATED IN Ω (K=10³ M=10⁶Ω)
2. ALL CAPACITAGE VALUES ARE INDICATED IN UF (P=10⁻⁶UF)
3. THIS SCHEMATIC DIAGRAM MAY BE CHANGED WITHOUT NOTICE FOR IMPROVEMENT OF PERFORMANCE.

SCHEMATIC DIAGRAM

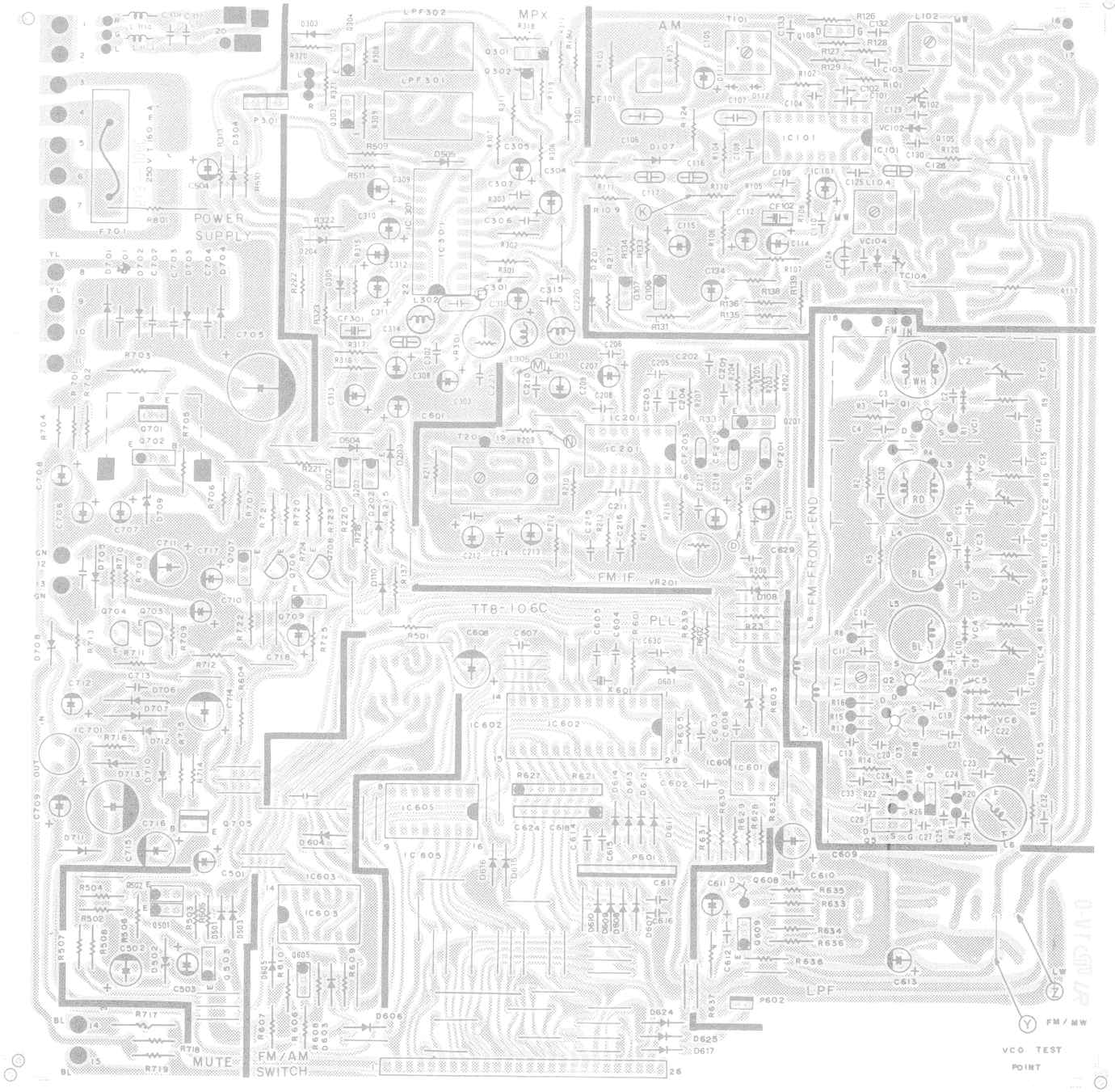


NO	SWITCH	NAME
1	S301	AUTO/STEREO /MANUAL-MONO
2	S601	MEMORY
3	S602	UP
4	S603	DOWN
5	S604	PRESET1
6	S605	PRESET2
7	S606	PRESET3
8	S607	PRESET4
9	S608	PRESET5
10	S609	PRESET6
11	S610	PRESET7
12	S611	MW
13	S612	FM

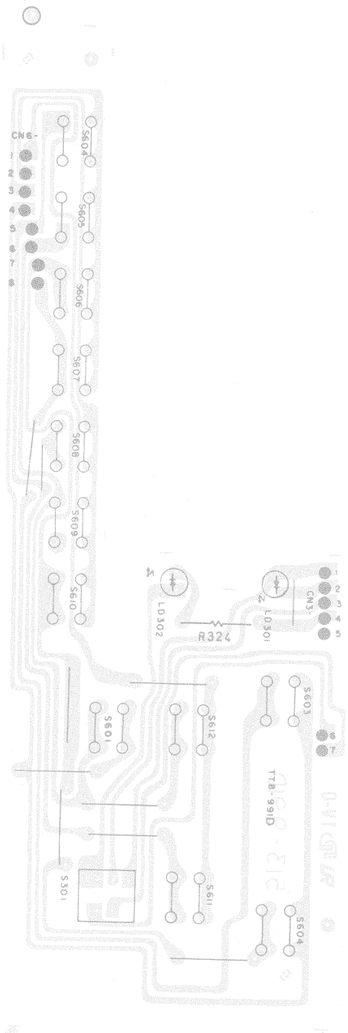
NOTES : 1. ALL RESISTANCE VALUES ARE INDICATED IN Ω (8=10³ M=10⁶Ω)
2. ALL CAPACITAGE VALUES ARE INDICATED IN UF (P=10⁻⁶UF)
3. THIS SCHEMATIC DIAGRAM MAY BE CHANGED WITHOUT NOTICE FOR IMPROVEMENT OF PERFORMANCE.

PCB LAYOUT

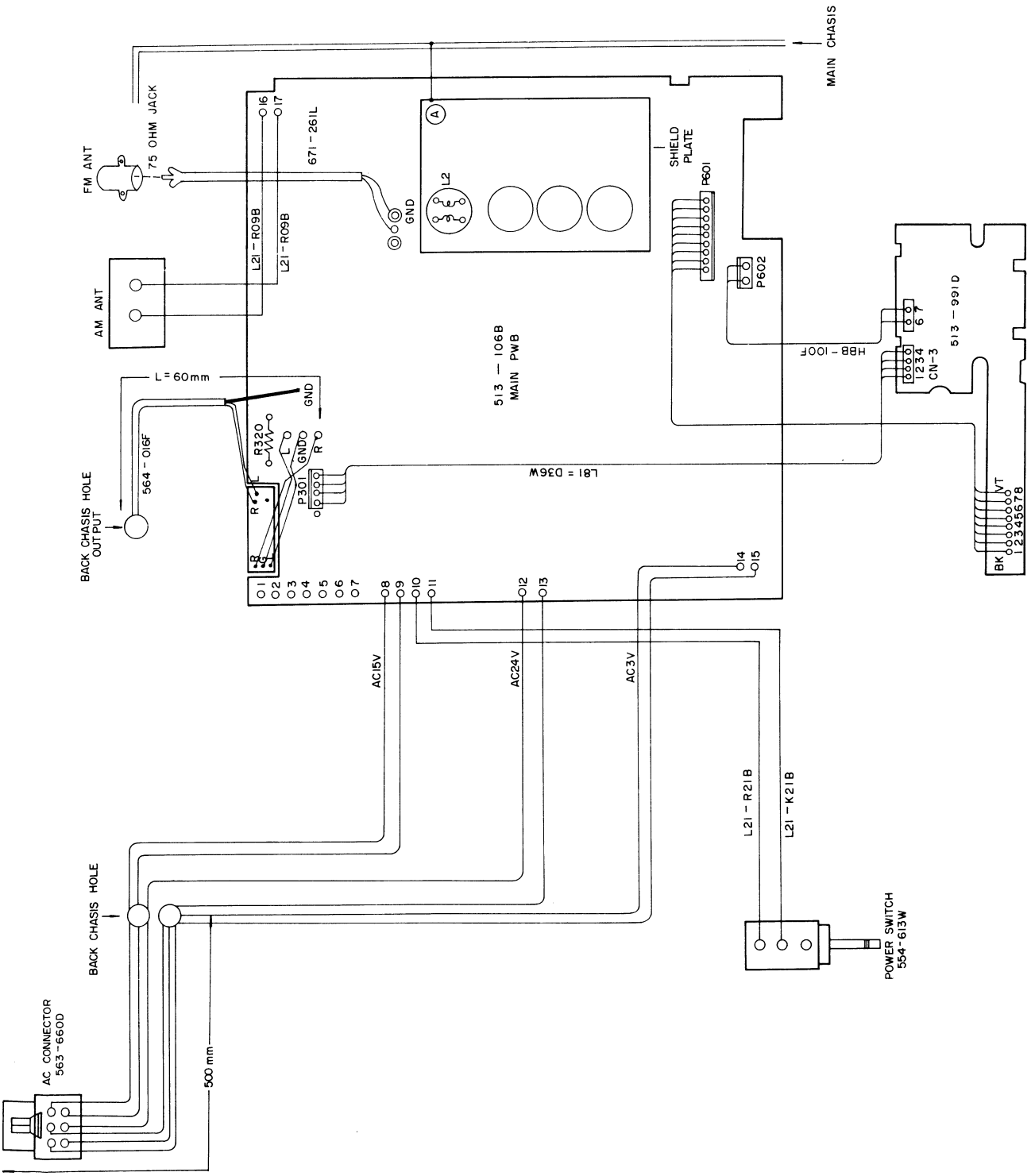
MAIN P.C. BOARD



SWITCH P.C. BOARD

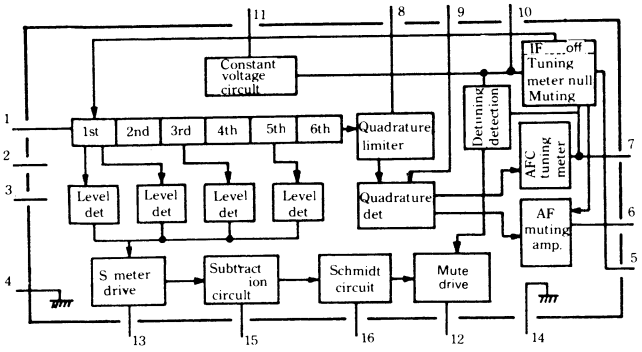


WIRING DIAGRAM

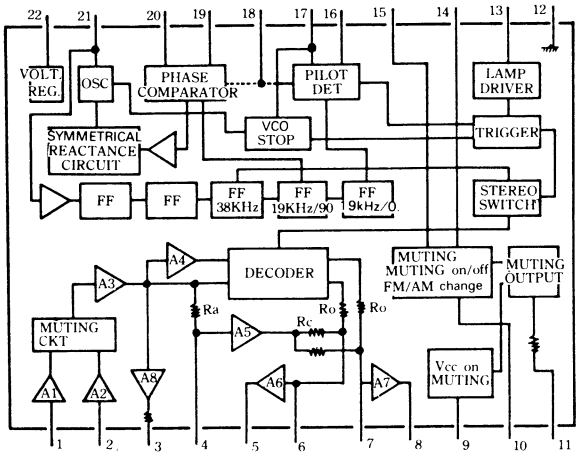


IC INTERNAL DIAGRAM

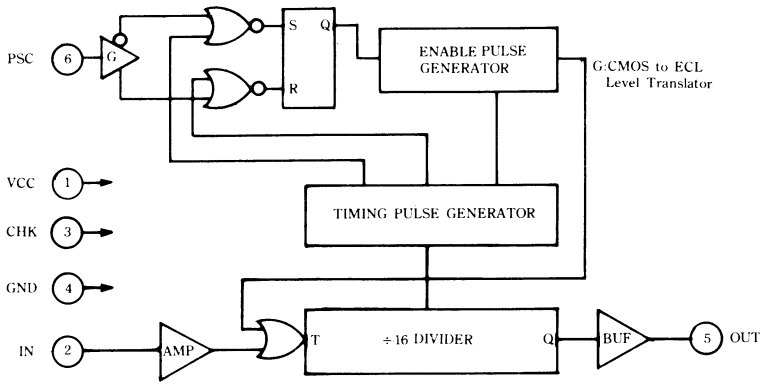
IC201 LA1235



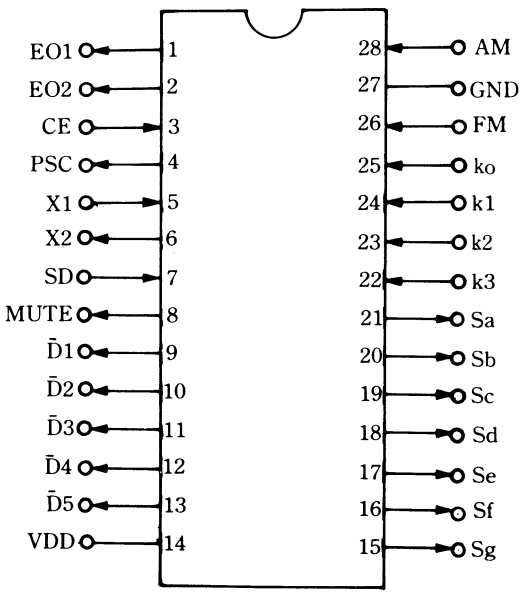
IC301 LA3400N



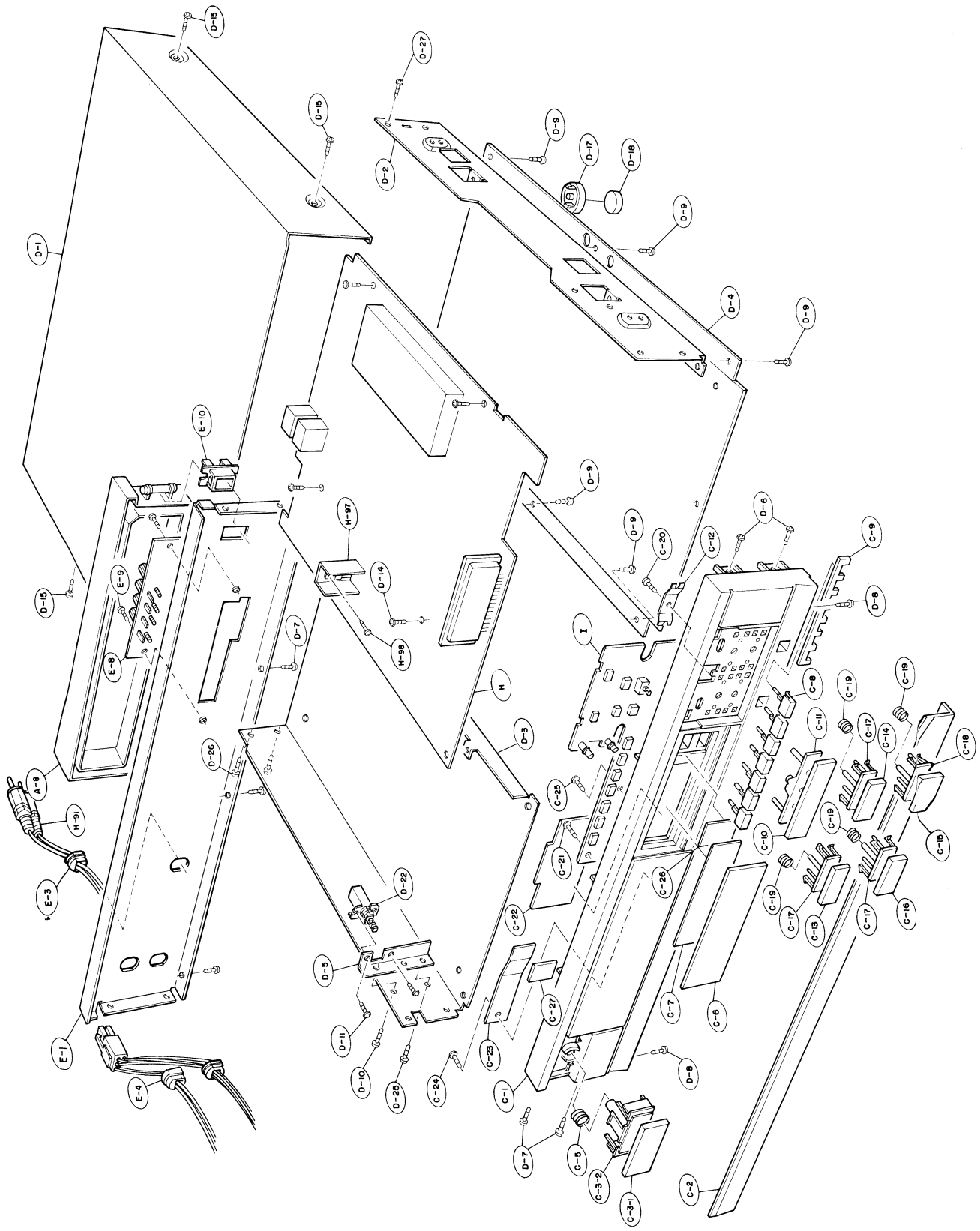
IC601 uPC553AC



IC602 uPD1703C—018



EXPLODED VIEW



REPLACEMENT PARTS LIST

PRODUCT SAFETY NOTICE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the safety precaution of this service manual, don't degrade the safety of the receiver through improper servicing.

NOTE: "R" marked parts at the remark mean parts which are the serviceable parts.
"S" marked parts at the remark mean parts which are the spare parts and the serviceable parts.

• **ELECTRICAL**

Location No.	Part No.	Description	Remark
INTEGRATED CIRCUITS			
IC101	668-093A	LA1245-AM IF	S
IC201	668-650A	LA1235-FM IF	S
IC301	668-301B	LA3400N-MPX	S
IC601	668-097A	UPB553AC-Prescalar	S
IC602	668-096A	UPD1703C 018-FM Synth	S
IC603	668-046A	MC14011BCP-Nand Gate	S
IC605	668-680B	UPA80C-TR Array	S
IC701	668-044B	UPC78L05-Regulator	S
FETS AND TRANSISTORS			
Q1-3	667-014A	FET, 3SK74L	S
Q4	665-819B	TR, KTC1923-0	S
Q5	667-009A	FET, KTK161-Y	S
Q106, 107	665-812B	TR, KTC1815-Y	S
Q108	667-009A	FET, KTK161-Y	S
Q201	665-820B	TR, KTC380TM-0	S
Q202, 203	665-812B	TR, KTC1815-Y	S
Q301	665-813B	TR, KTA1015-Y	S
Q302-304	665-812B	TR, KTC1815-Y	S
Q501-503	665-812B	TR, KTC1815-Y	S
Q605	665-812B	TR, KTC1815-Y	S
Q608	667-010C	FET, KTK30A-Y	S
Q609	665-817A	TR, KTC2240-GR	S
Q701	665-708A	TR, KTD526-0	S
Q702	665-817A	TR, KTC2240-GR	S
Q703, 704	665-833C	TR, KTA817A-0	S
Q705	664-601A	TR, KTD880-0	S
Q706	665-600A	TR, 2SB764-E	S
Q707	665-812B	TR, KTC1815-Y	S
Q708	665-600A	TR,2SB764-E	S
Q709	665-812B	TR, KTC1815-Y	S
DIODES			
D111, 112	651-003A	Switch, DS4148	S
D107, 108	651-003A	Switch, DS4148	S
D110	651-003A	Switch, DS4148	S
D201-204	651-003A	Switch, DS4148	S
D301	651-003A	Switch DS4148	S
D303-305	651-003A	Switch, DS4148	S
D501	651-003A	Switch, DS4148	S
D502	654-723G	Zener, DZ10B	S
D503-505	651-003A	Switch, DS4148	S
D601, 602	654-722E	Zener, DZ5.1B	S
D603-617	651-003A	Switch, DS4148	S
D624, 625	651-003A	Switch, DS4148	
D701-704	652-005C	Rectifier, DS4001	S
D705-707	652-005D	Rectifier, DS4002	S
D708	654-722A	Zener, DZ3.0B	S
D709	654-723B	Zener, DZ6.2B	S
D710	654-615F	Zener, ZPY30	S
D711,712	651-003A	Switch, DS4148	S
D713	654-608C	Zener, ZPD5.1	S
VC1-6	654-419A	Varactor, ISV55	S
VC102	654-420A	Varactor, SVC333A	S
VC104	654-420A	Varactor, SVC333A	S
LD301	653-636A	LED, SLR54URC3-M RD	S
LD302	653-636D	LED, SLR54GC3-P	S
COILS AND TRANSFORMERS			
L2	635-607Z	Coil, FM OSC. WH	S
L3	635-607W	Coil, FM OSC RD	S
L4	635-607Y	Coil, FM OSC BL	S
L6	635-607X	Coil, FM OSC WH	S
L7, 8	636-602B	Coil, Choke	S
L102	631-606B	Trans, AM RF 250uH	S
L104	634-602Q	Coil, AM OSC	S
L301	637-601D	Coil, Peaking 20.8mH	S
L302	637-601E	Coil, Peaking 7.8mH	S
L303, 304	637-604D	Inductor Fixed 47uH	S
L305	637-601D	Coil, Peaking 20.8mH	S
T1	644-610B	Coil, FM IFT	S
T101	644-601B	Coil, AM IFT	S
T201	647-606A	Discriminator	S
FILTERS			
CF101	616-004B	Ceramic, SFP450H	S
CF102	616-021A	Ceramic, BFJ450C4N	S

Location No.	Part No.	Description	Remark
CF201-203	616-029A	Ceramic, SFE10.7MLH	S
CF301	616-020C	Resonation Ceramic	S
LPF301, 302	639-606A	Low Pass	S
BPF	616-301B	Band Pass	S
SWITCHES AND VOLUMES			
S2	554-613W	SW, Power	S
S301	554-633A	SW, SEA12A	S
S601-613	558-026A	SW, Tact KPT-1105	R
VR201	613-002D	VR, Semi-Fixed 22KB	S
VR301	613-002H	VR, Semi-Fixed 330KB	S

Location No.	Part No.	Description	Remark
MISCELLANEOUS			
TC1-4	623-025A	Trimmer, CTY121B273	S
TC5	623-026A	Trimmer, ECV-1ZW10×3I	S
TC102	623-001A	Trimmer, Ceramic TZ03T110F	S
TC104	623-001C	Trimmer, Ceramic TZ03R200F	S
X601	617-601D	Crustal, 4,500MAZ	S
FL601	659-021A	Digitron, FIP7D8	S
C618-624	614-014A	C, Network 100pF	R
R621-627	614-013D	R, Network 330K	R

- **CABINET**

Location No.	Part No.	Description	Remark
A-8	632-210A	Coil, AM Loop Antenna	S
C-1	258-522E	Panel, Front	S
C-2	246-530D	Deco, Front	S
C-3	273-529J	Knob Ass'y, Power	S
C-3-1	273-800I	Knob, Power	S
C-3-2	324-331A	Holder, Power Knob	S
C-5	442-634X	Spring, Power Knob	S
C-6	236-521E	Window, Display	S
C-7	236-522E	Window, Inner	S
C-8	273-516A	Knob, Preset	S
C-9	442-520B	Spring, Preset Knob	S
C-10	273-510J	Knob, Decoration	S
C-11	324-550A	Holder, Volume Knob	S
C-12	442-635A	Spring, Knob	S
C-13	273-530I	Knob, Decoration (FM)	S
C-14	273-530J	Knob, Decoration (AM)	S
C-15	273-530K	Knob,Decoration (Auto/Manual)	S
C-16	273-530L	Knob, Decoration (Memory)	S
C-17	324-510A	Holder, Knob (A)	S
C-18	324-511A	Holder, Knob (B)	S
C-19	442-635B	Spring	S
C-20	353-025F	Screw, Special	S
C-21	353-025G	Switch, DS4148	S
C-22	236-523A	Window, Display Filter	S
C-23	442-937A	Spring, Supporter Digit	S
C-24	353-025F	Screw, Special	S
C-25	TRQ0936J	Screw	
C-26	231-561L	Sheet, Led Display	
C-27	447-606U	Cushion	S
D-1	213-520A	Cabinet	S
D-2	315-510C	Frame, Side	R
D-3	313-510C	Chassis, Bottom	S

Location No.	Part No.	Description	Remark
D-4	256-520B	Plate, Bottom	S
D-5	321-410B	Bracket, Power Switch	S
D-6	TRQ1830J	Screw, TRQ + 2×6A	
D-7	TRQ1830J	Screw, TRQ2 + 3×6A	
D-8	TCQ1830J	Screw, Tapping TC3 + 3×6	
D-9	TRQ1830J	Screw, TRQ2 + 3×6A	
D-10	TRQ1830J	Screw, TRQ2 + 3×6A	
D-11	MRC1830J	Screw	
D-14	TRQ 1830J	Screw, TRQ2 + 3×6A	
D-15	353-633A	Screw, Special	S
D-17	265-027A	Foot	R
D-18	472-610B	Felt	
D-22	554-613W	SW, Power	S
D-25	TRQ1822J	Screw, TRQ2 + 3×4A	
D-26	TBQ1830J	Screw, TBQ + 3×6	
D-27	TBQ1830J	Screw, TBQ + 3×6	
E-1	258-980 D	Panel, Back	S
E-3	324-348A	Holder, Cord	S
E-4	324-620A	Holder, Cord	S
E-5	NHA1800J	Nut NH 1-3	
E-6	MRC1836I	Screw, MRC + 3×8	
E-7	573-002B	Socket Ant	R
E-8	563-016A	Screw Terminal Assy(2P)	S
E-9	TRQ1836I	Screw, TRQ2 + 3×8A	
E-10	324-515B	Holder, AM Ant	S
H	511-106N	PCB Ass'y, Main	R
H-91	564-016G	Cord, Phono	S
H-94	256-449A	Plate, Shield-A	S
H-95	256-451A	Plate, Shield-C	S
H-97	255-039A	Plate, Heat Sink	
H-98	TRQ1836J	Screw, TRQ2 + 3×8A	
H-99	256-503A	Plate, Shield-B	S
I	511-991D	PCB Ass'y Switch	

HIGH SPEED DUBBING CASSETTE DECK

GSW-5300

SPECIFICATIONS

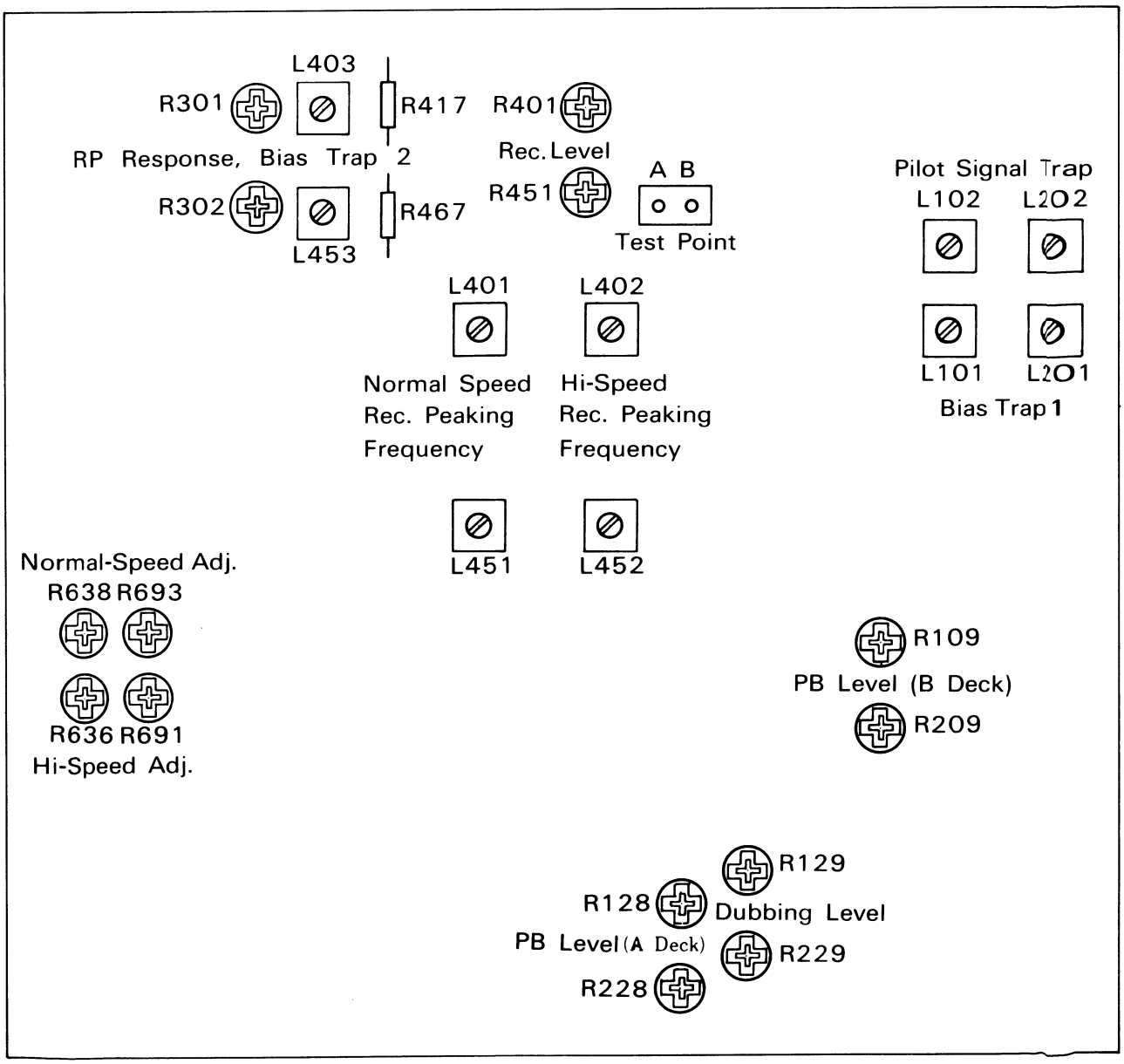
Frequency Response	
Normal	30 to 14,000Hz
CrO_2	30 to 14,000Hz
Metal	30 to 16,000Hz
Signal/Noise Ratio	62dB (Dolby NR ON, IHF/A Curve)
Crosstalk	60dB
Erase Ratio	65dB
Wow and Flutter	0.1 (WRMS)
Power Source	AC 220Volt (0.4/0.3A MAX)
Dimensions (W × H × D)	345 × 122 × 280 (mm)
Weight	4.0Kg

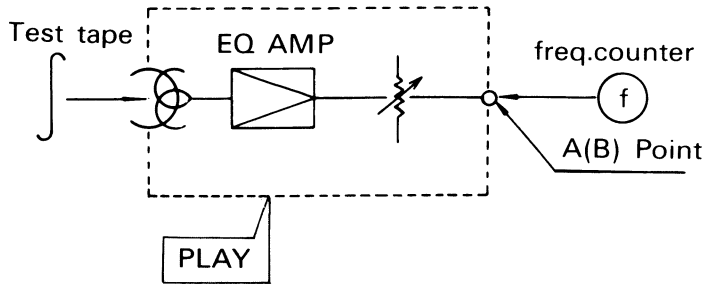
ADJUSTMENT

EQUIPMENT NEEDED

1. Audio frequency OSC
2. VTVM
3. Test tape
   a. MTT-114N
   b. MTT-111
   c. MTT-150
   d. MTT-501 (Normal)
   e. CS-26 (CrO_2)
   f. Metalic-4 (Metal)

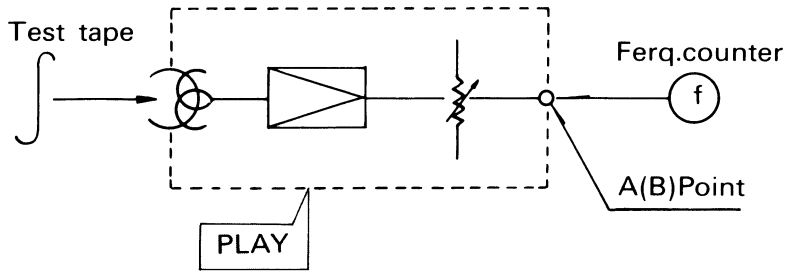
TEST AND ADJUSTMENT POINT





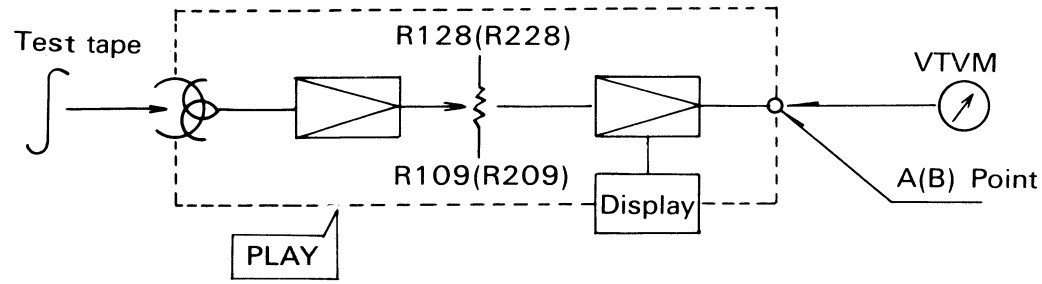
Deck Condition	Test tape	Test point	Adjustment	Adjust for
Play	MTT-114N	A.B. point	Head screw	R/L Maximum

2. MOTOR SPEED ADJUSTMENT—Hi speed, Normal speed



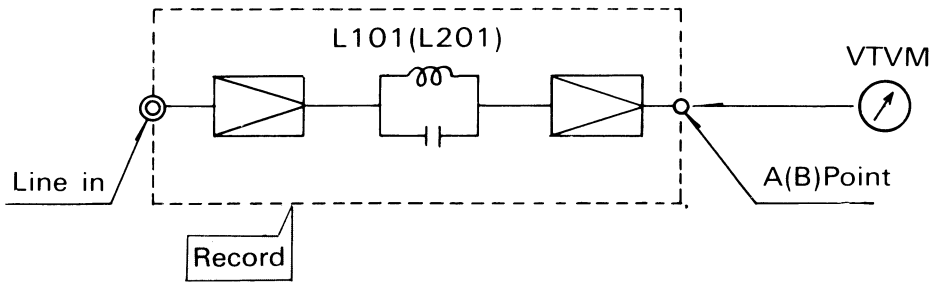
Item	Deck condition	Test tape	Test point	Adjustment	Adjust for	Remark
Hi-speed	Play	MTT-111	A.B. point	Deck A:R636 Deck B:R691	6kHz ± 60Hz	Earth the base of TR626
Normal-speed	Play	MTT-111	A.B. point	Deck A:R638 Deck B:R693	3kHz ± 30Hz	After you adjust Hi-speed, adjust normal-speed.

3. PLAY BACK LEVEL ADJUSTMENT



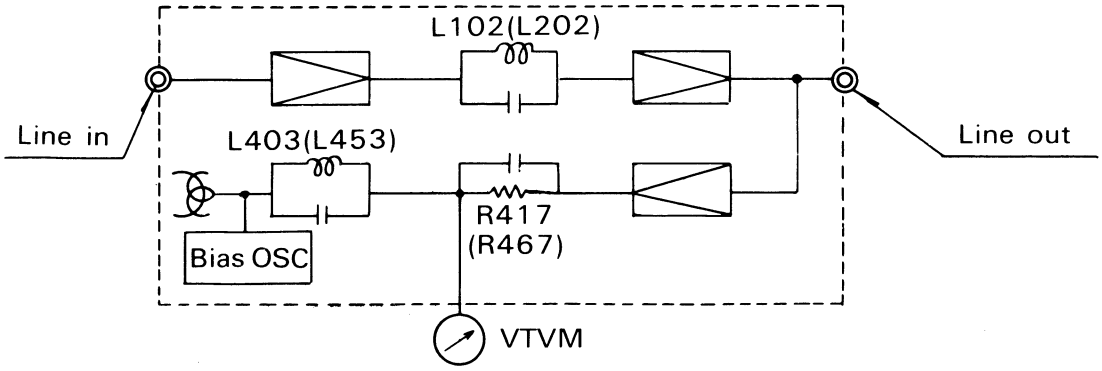
Deck condition	Test tape	Test point	Adjust for	output	Remark
Play	MTT-150	A.B. point	Deck A:L-R128, R-228 Deck B:L-R109, R-209	50mV	Repeat adjustment several times

4. BIAS TRAP ADJUSTMENT ①



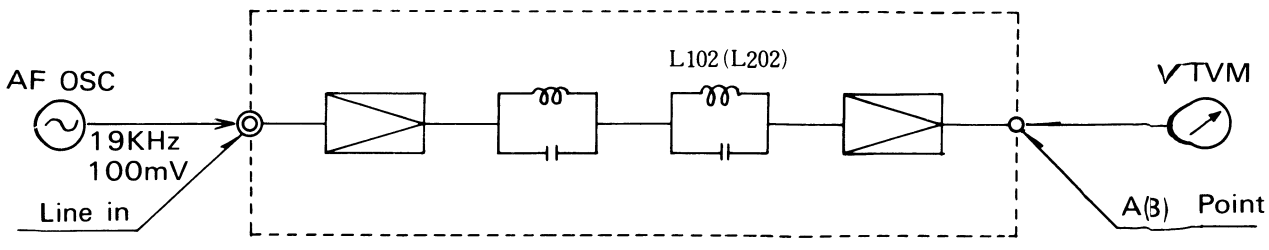
Deck	Deck condition	Test tape	Test point	Adjustment	Adjust for	Remark
Deck A	Stop					Metal function
Deck B	R/P-pause	Blank tape	A, B point	L101, L201	Minimum	

5. BIAS TRAP ADJUSTMENT ②



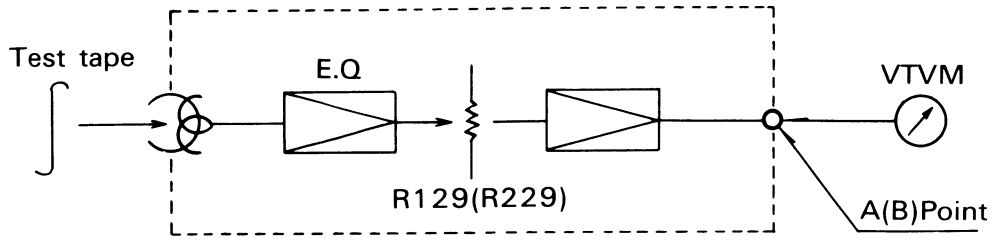
Deck	Deck condition	Test tape	Test point	Adjustment	Adjust for	Remark
Deck A	Stop					Metal Function
Deck B	R/P-pause	Blank tape	R417, R467	L403, L453	Minimum	

6. PILOT SIGNAL TRAP ADJUSTMENT



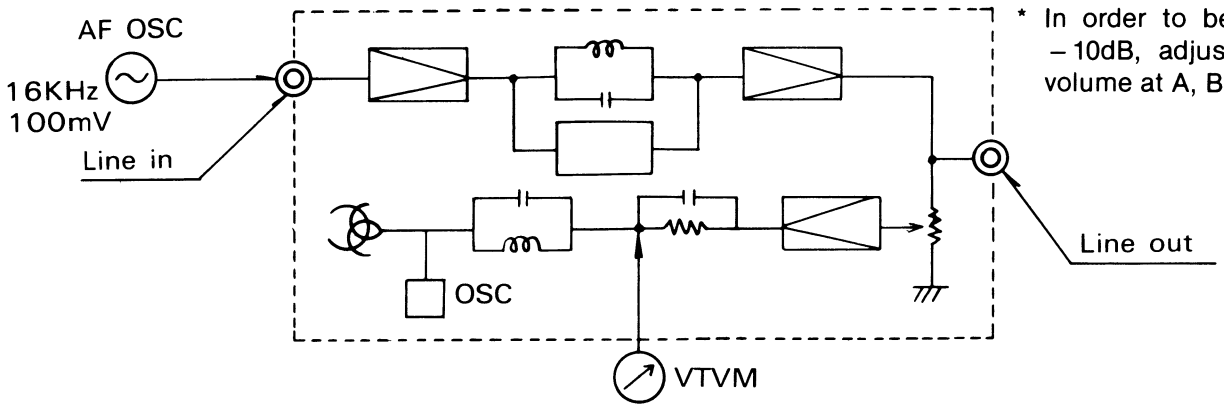
Deck	Deck condition	Test tape	Test point	Adjustment	Input	Adjust for	Remark
Deck A	Stop				19kHz	Minimum	Dubbing
Deck B	R/P-pause	Blank tape	A.B point	L102, L202	100mV		off

7. DUBBING LEVEL ADJUSTMENT



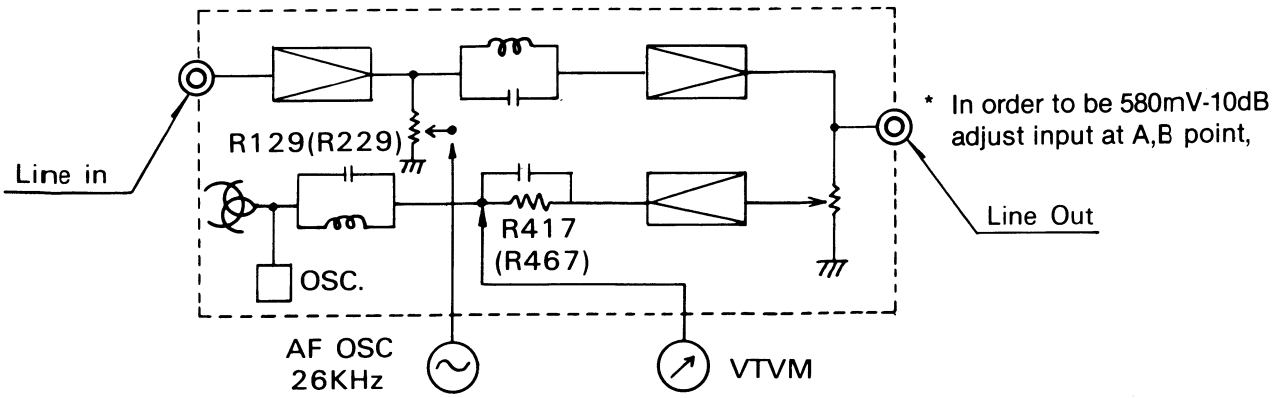
Deck	Deck condition	Test tape	Test point	Adjustment	Output	Adjust for	Remark
Deck A	Play	MTT-150	A.B	R129	580mV	± 1dB	Dubbing condition
Deck B	R/P-pause	Blank tape		R229			

8. REC PEAKING FREQUENCY-AT NORMAL SPEED



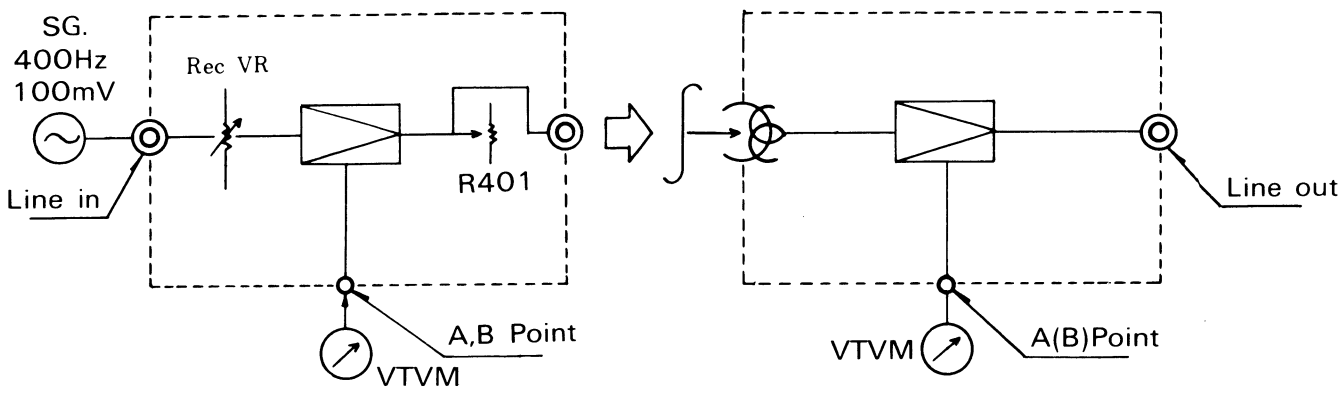
Deck	Deck condition	Test tape	Test point	Adjustment	Input	Adjust for	Remark
Deck A	Stop				16kHz 100mV	Maximum	Dubbing speed off
Deck B	R/P-pause	Blank tape	R417, R467	L401, L451			

9. REC. PEAKING FREQUENCY-AT HI-SPEED



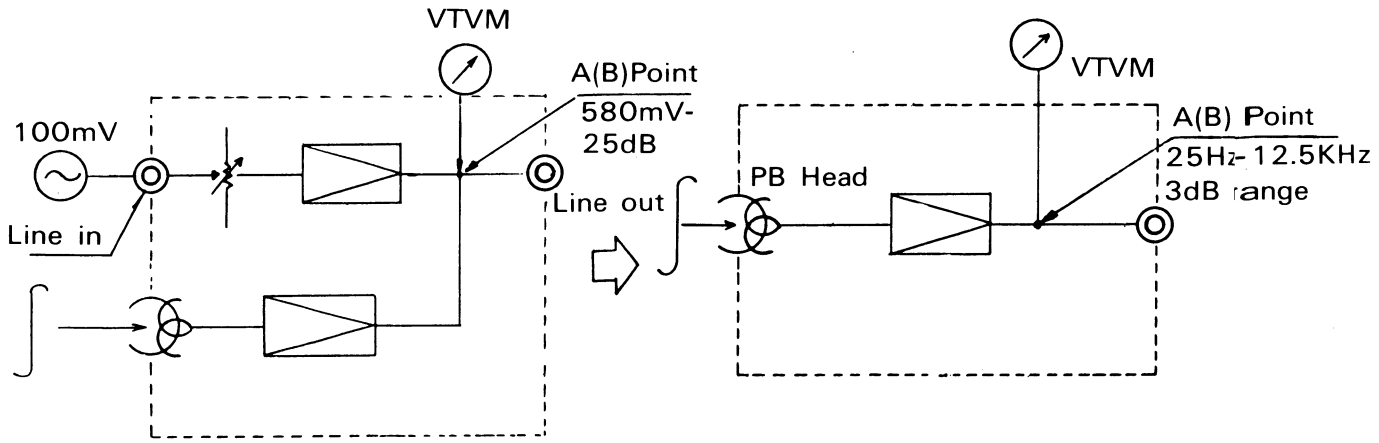
Deck	Deck condition	Test tape	Test point	Adjustment	Input	Adjust for	Remark
Deck A	PB-pause	Blank tape	R407 R417	L402 L452	26kHz, 100mV 10dB, input to the center tap of R129, 229.	Maximum	Dubbing Hi-speed on
Deck B	R/P-pause	Blank tape					

10. REC. LEVEL ADJUSTMENT



Deck	Deck condition	Test tape	Test point	Adjustment	Input	Output	point	Remark
Deck A	Stop			R401	Rec.VR.—Max. A,B point— 400Hz, 580mV output.	580mV	± 1dB	Normal speed
Deck B	R/P-PB	MTT-501	A.B point	R451		At PB		

11. RECORD PLAY FREQUENCY RESPONSE (BIAS ADJUSTMENT)



Deck	Deck condition	Test tape	Test point	Adjustment	Input	Remark
Deck A	Stop				250Hz-12.5kHz 400Hz. Output: 580mV-25dB	Normal speed
Deck B	R/P-PB	MTT-501 CS-26, Metalic-x	A,B point	R301 R302		

NOTE; Adjust under normal speed, confirm R/P response of Hi-speed, repeat steps 10 and 11 several times.

STANDARD MAINTENANCE

Tape Head and Capstan Cleaning

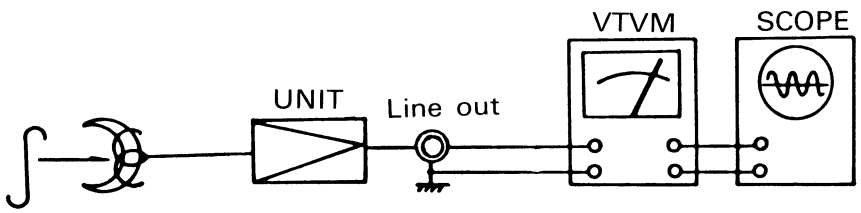
Whenever a unit is brought in for service or repair, clean the tape heads, capstan drive shaft and all other tape handling surfaces touching the tape to ensure proper tape run and optimum frequency response. Use a cotton swab dipped in head cleaner or denatured alcohol. Wipe dry.

Tape Head Demagnetization

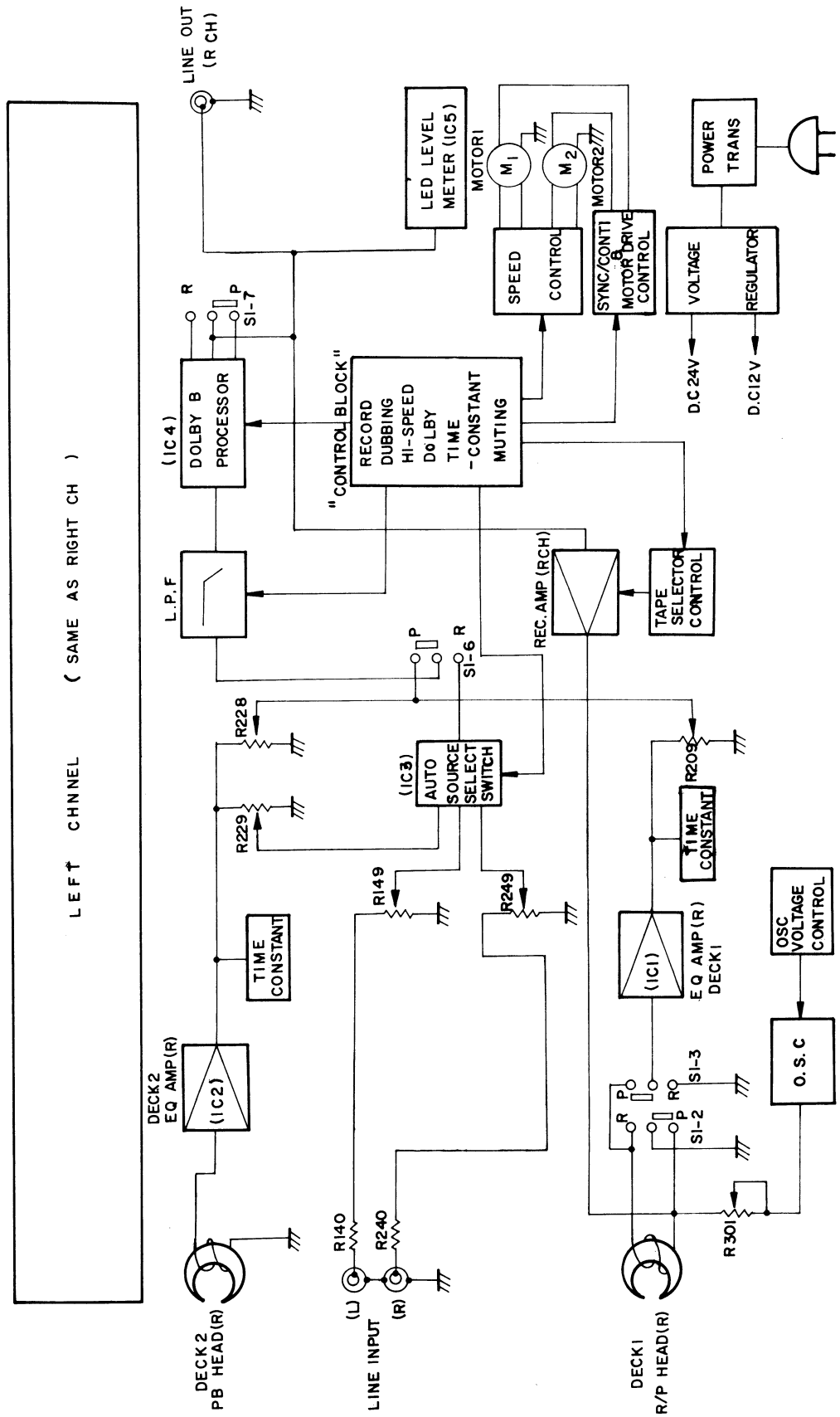
Do not use magnetized tools near the tape heads, since they can magnetize the head. After long period of use the heads will retain a small amount of residual magnetism. A magnetized head will result in loss of high frequency response and increased noise. Use a standard tape head demagnetizer and follow the instructions supplied with it to demagnetize the heads.

Azimuth Adjustment

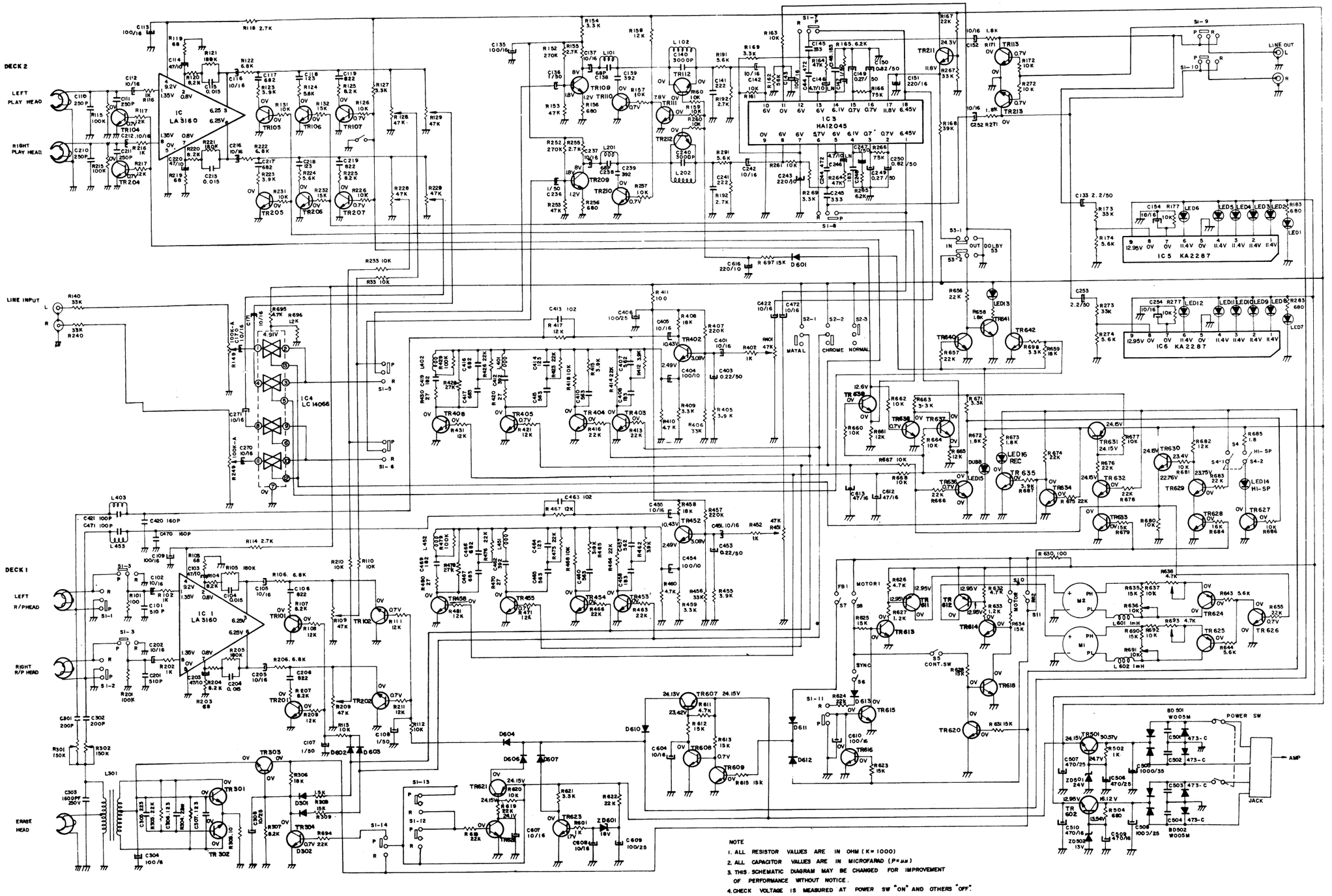
1. Azimuth adjustment is normally only required when the head is replaced, or for cases of cross-talk and poor high frequency response. A test tape is required for such adjustment.
2. Connect a scope or VTVM to the right channel output. Insert a test tape into the unit (Use a test tape such as TEAC MTT-114, MTT-115). Adjust the azimuth adjustment screw for maximum output onto the right channel. Use glyptal or other non-hardening cement to lock the azimuth adjustment screw.



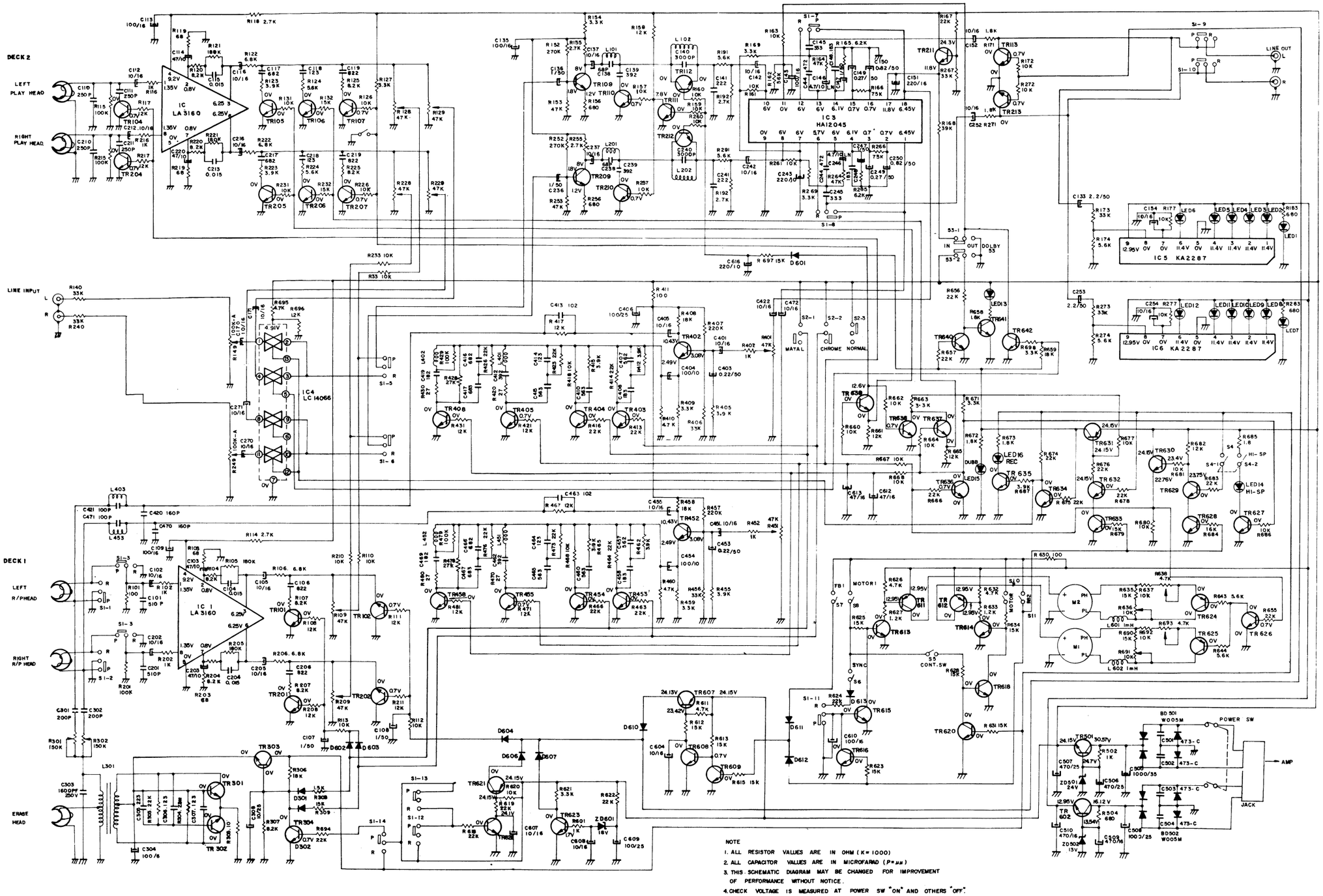
BLOCK DIAGRAM



SCHEMATIC DIAGRAM

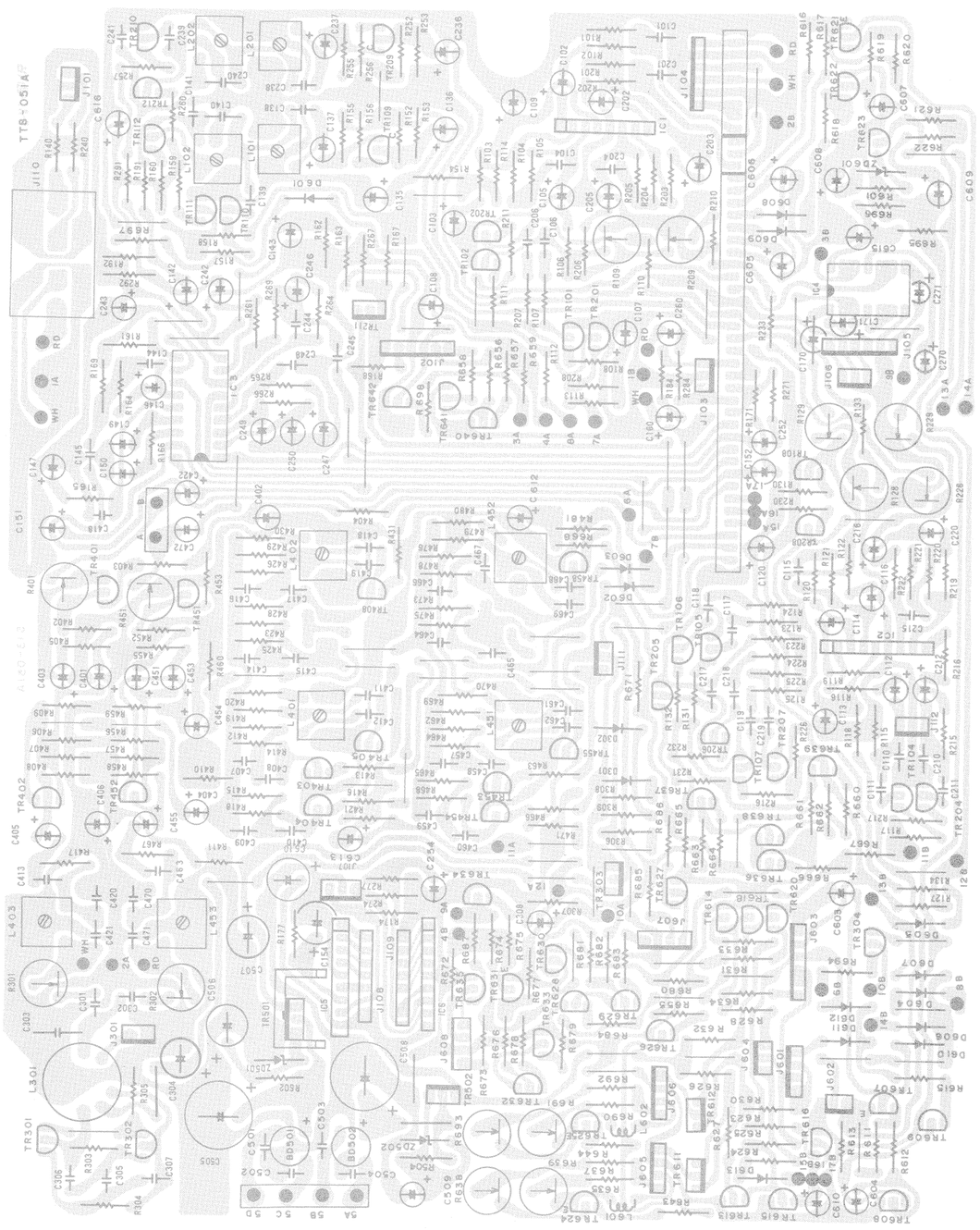


SCHEMATIC DIAGRAM

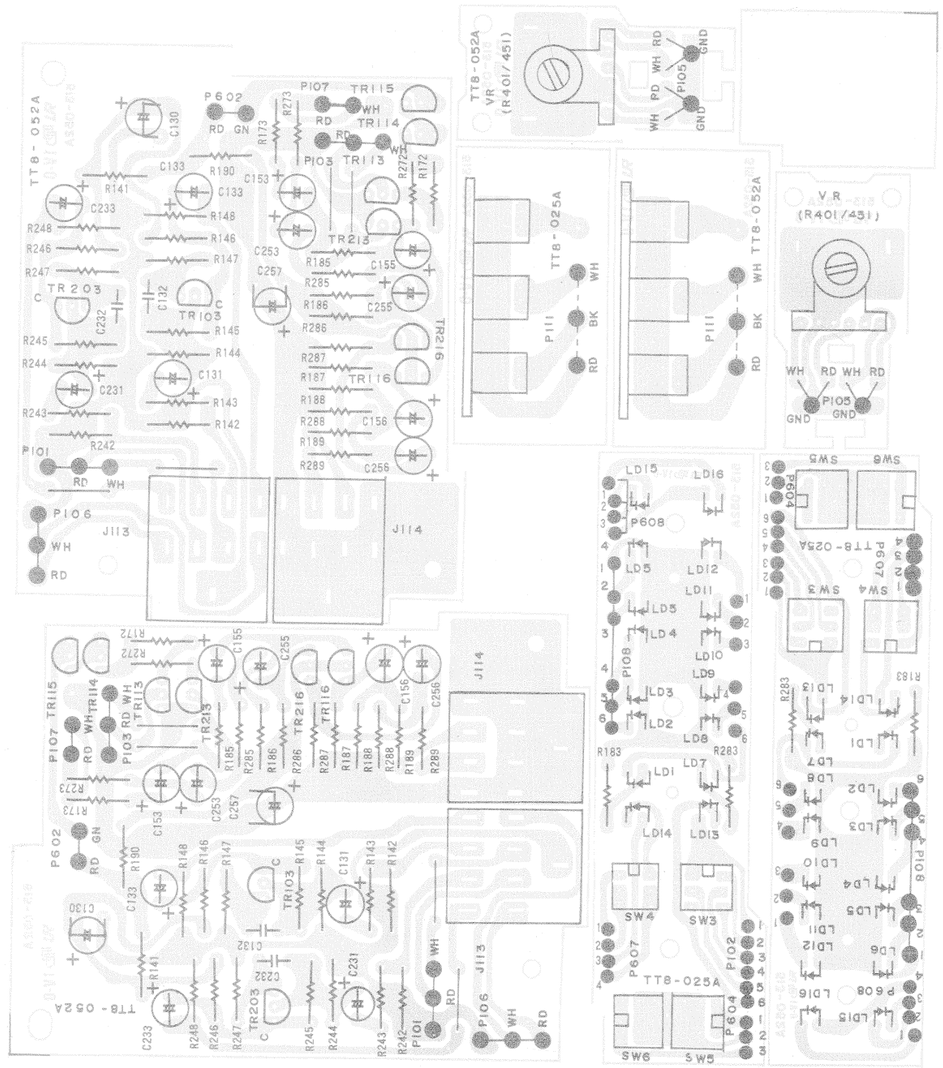


PCB LAYOUT

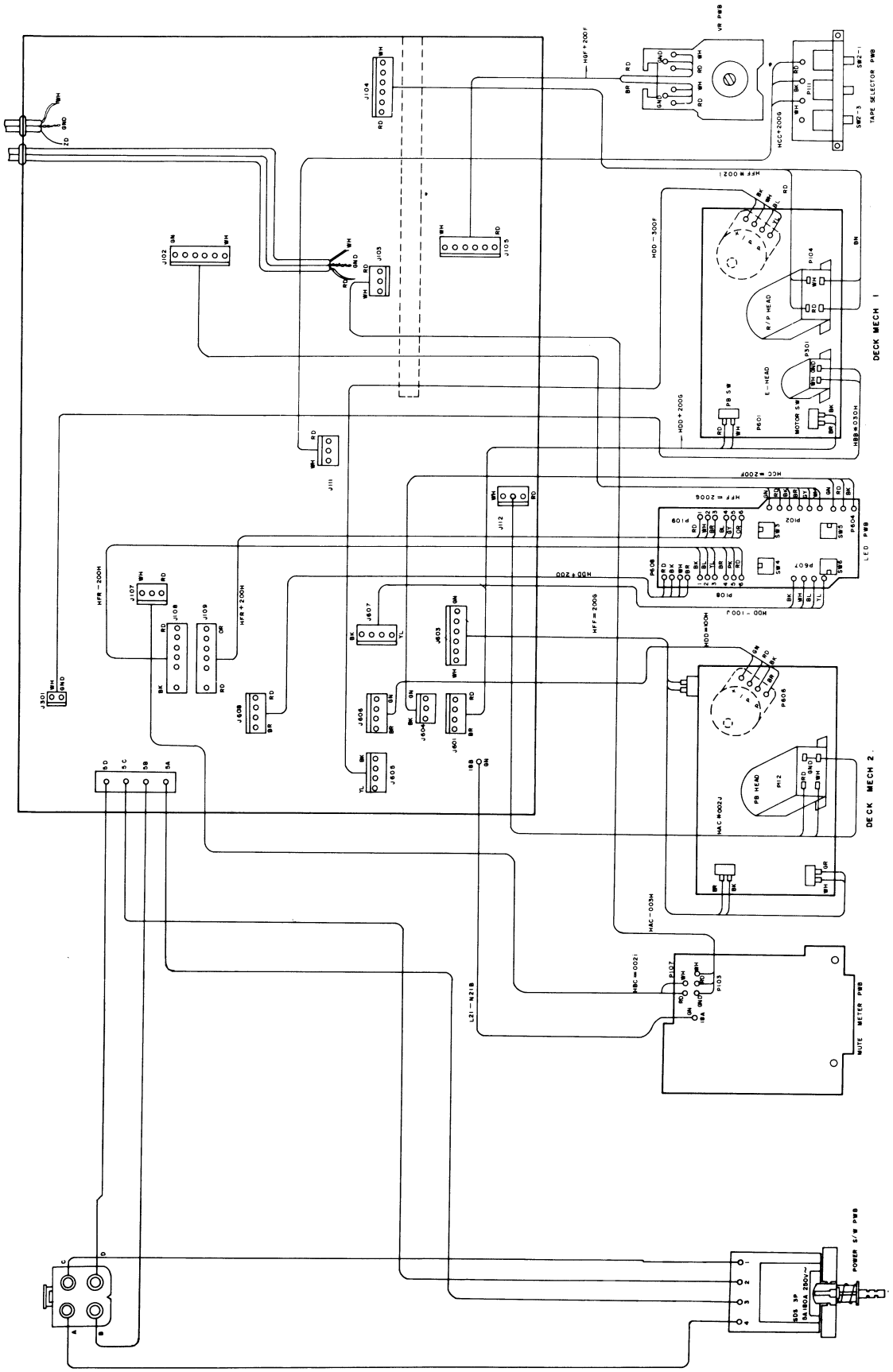
MAIN P.C. BOARD



MIC & HEADPHONE P.C. BOARD

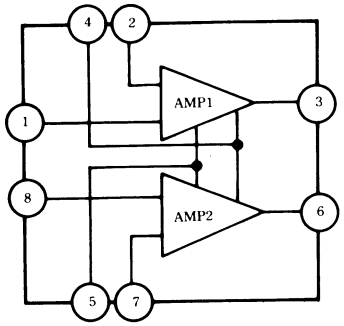


WIRING DIAGRAM

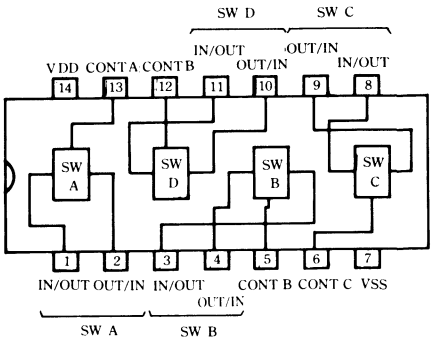


IC INTERNAL DIAGRAM

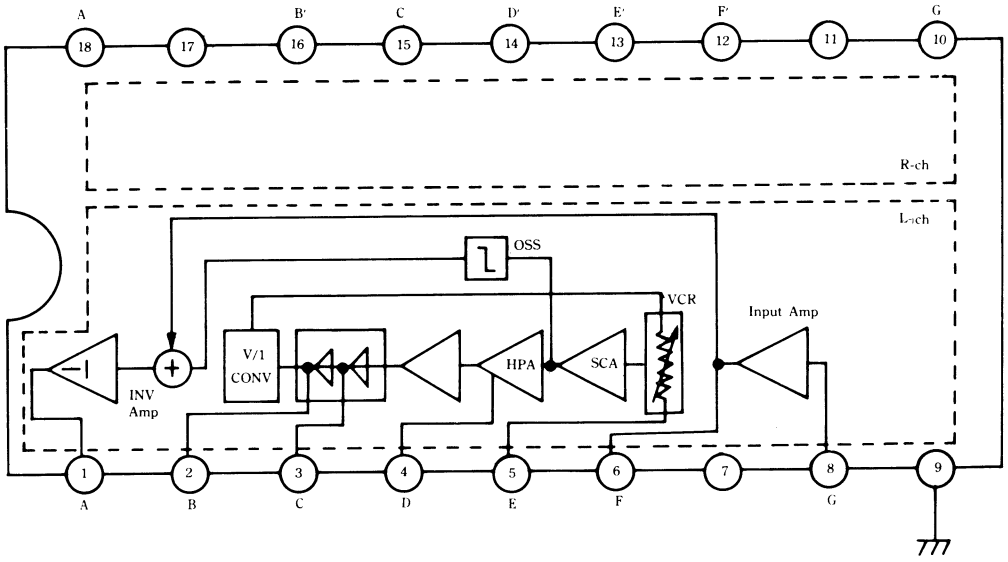
IC 1, 2 LA3160



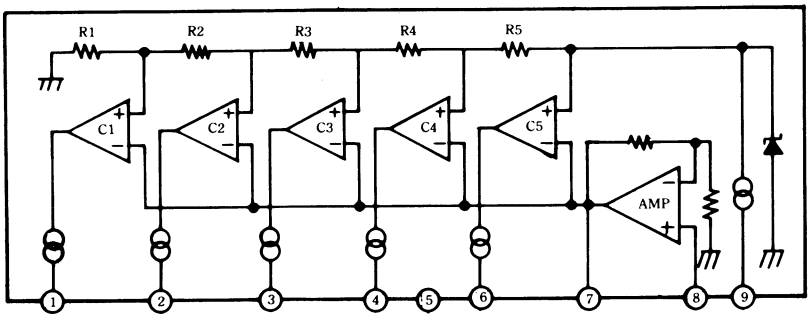
IC4 LC4066B



IC3 HA12045

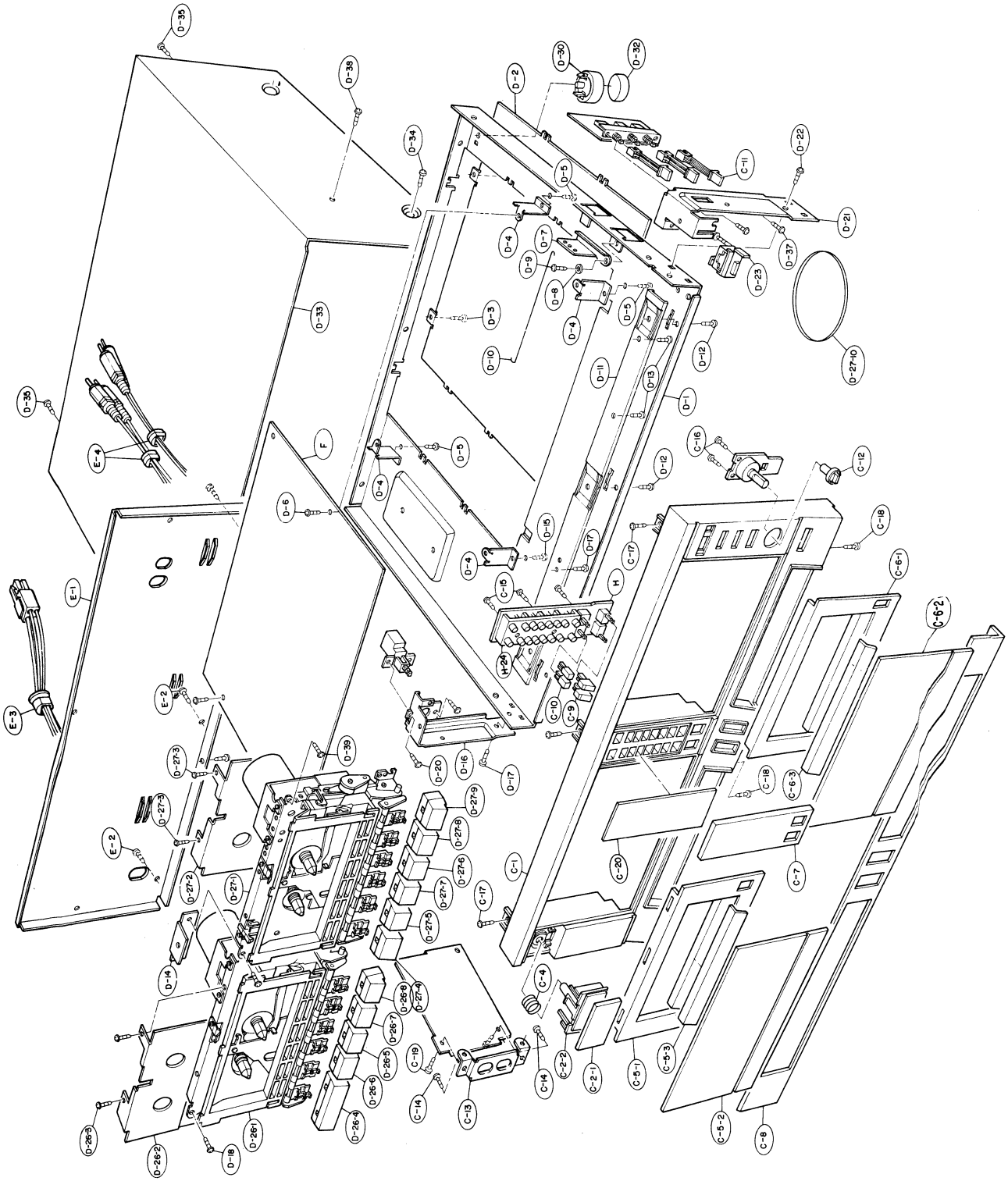


IC5, 6 KA2287

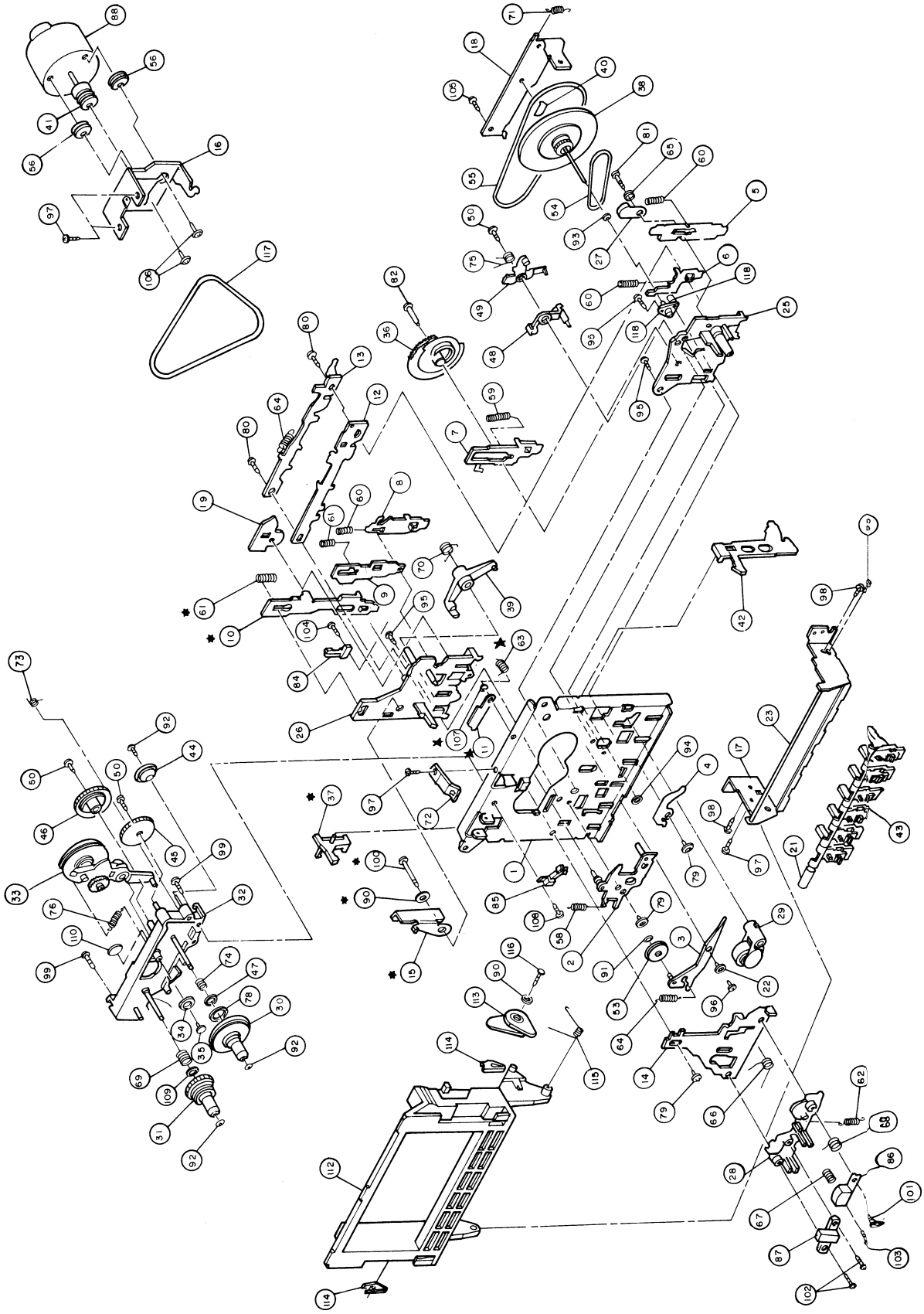


EXPLODED VIEW

- **CABINET**



- **DECK MECHANISM**



NOTE: 1. Record play back deck mechanism is consisted of all of parts and play back deck mechanism is consisted of the others except expressing with "★".
2. Excluded parts in the parts list are not available as replacement parts.

REPLACEMENT PARTS LIST

PRODUCT SAFETY NOTICE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the safety precaution of this service manual, don't degrade the safety of the receiver through improper servicing.

NOTE: "R" marked parts at the remark mean parts which are the serviceable.
"S" marked parts at the remark mean parts which are the spare parts and the serviceable parts.

- **ELECTRICAL**

Location No.	Part No.	Description	Remark
INTEGRATED CIRCUITS			
IC1, 2	668-145A	LA3160-Pre Amp	S
IC3	668-664A	HA12045-Dolby	S
IC4	668-662A	LC4066B-Analog Switch	S
IC5, 6	668-666D	KA2287-5 Dot LED Door	S
TRANSISTORS			
TR101, 102	665-812B	KTC1815-Y	S
TR104-107	665-812B	KTC1815-Y	S
TR109	662-606C	MPS9635C	S
TR110	665-812B	KTC1815-Y	S
TR111, 112	665-812B	KTC1815-Y	S
TR113	665-812B	KTC1815-Y	S
TR201, 202	665-812B	KTC1815-Y	S
TR204-207	665-812B	KTC1815-Y	S
TR209	662-606C	MPS9635C	S
TR210	665-812B	KTC1815-Y	S
TR211	665-708B	KTD526-Y	S
TR212	665-812B	KTC1815-Y	S
TR213	665-812B	KTC1815-Y	S
TR301, 302	665-881C	KTC2236AY	S
TR303	655-708B	KTD526-Y	S
TR304	665-812B	KTD1815-Y	S
TR402	665-816B	KTC732TM-BL	S
TR403-405	665-812B	KTC1815-Y	S
TR408	665-812B	KTC1815-Y	S
TR452	665-816B	KTC732TM-BL	S
TR453-455	665-812B	KTC1815-Y	S
TR458	665-812B	KTC1815-Y	S
TR501, 502	665-708B	KTD526-Y	S
TR607	665-813B	KTA1015-Y	S
TR608, 609	665-812B	KTC1815-Y	S
TR611, 612	665-712A	KTA966A-Y	S
TR613	665-812B	KTC1815-Y	S
TR614	665-812B	KTC1815-Y	S
TR615, 616	665-812B	KTC1815-Y	S
TR618	665-812B	KTC1815-Y	S
TR620	665-812B	KTC1815-Y	S
TR621	665-813B	KTA1015-Y	S
TR622, 623	665-812B	KTD1815-Y	S
TR624, 625	665-812B	KTA1015-Y	S
TR626-630	605-812B	KTC1815-Y	S
TR631	665-813B	KTA1015-Y	S
TR632-642	665T812B	KTC1815-Y	S
DIODES			
D301, 302	652-605B	Switch, IS2742	S
D601-607	652-605B	Switch, IS2472	S
D610-613	652-605B	Switch, IS2472	S
LD1-4	653-636B	LED, SLR54GC3-M GN	S
LD5, 6	653-636A	LED, SLR54URC3-M RD	S
LD7-10	653-636B	LED, SLR54GC3-M GN	S
LD11-16	653-636A	LED, SLR54URC3-M RD	S
ZD501	654-724F	Zener, DZ24B	S
ZD502	654-724C	Zener, DZ13B	S
ZD601	654-724E	Zener, DZ18B	S
BD501, 502	652-013A	Rect, W005M	S
COILS			
L101, 102	638-601C	Coil, Trap	S
L201, 202	638-601C	Coil, Trap	S
L301	634-608C	Coil, Bias Osc.	S
L401-403	638-601C	Coil, Trap	S
L451-453	638-601C	Coil, Trap	S
L601-602	639-003G	Coil, padding 1uH	S
SWITCHES AND VOLUMES			
SW1	552-608A	Switch, Slide CL114K	S
SW2	554-636A	Switch, Push SUY31A	S
SW3-6	554-635A	Switch, Push SPH121A	S
R109	613-002G	VR, Semi-Fixed 47KB	S
R128, 129	613-002G	VR. Semi-Fixed 47KB	S
R149	611-640A	VR, 100KA	S
R209	613-002G	VR, Semi-Fixed 47KB	S
R228, 229	613-002G	VR, Semi-Fixed 47KB	S
R249	611-640A	VR, 100KA	S
R301, 302	613-002E	VR, Semi-Fixed 150KB	S
R401, 451	613-002G	VR, Semi-Fixed 47KB	S

Location No.	Part No.	Description	Remark	Location No.	Part No.	Description	Remark
R636	613-002F	VR, Semi-Fixed 10KB	S	R691	613-002F	VR, Semi-Fixed 10KB	S
R638	613-002C	VR, Semi-Fixed 4.7KB	S	R693	613-002C	VR, Semi-Fixed 4.7KB	S

• CABINET

Location No.	Part No.	Description	Remark	Location No.	Part No.	Description	Remark
C-1	258-010F	Panel, Front	S	D-18	TCQ1836J	Screw, TCQ + 3 × 8	
C-2	273-029J	Knob Ass'y, Power	S	D-20	MRC1830J	Screw	
C-2-1	273-800I	Knob, Power	S	D-21	321-903A	Bracket-R, Deck	S
C-2-2	324-331A	Holder, Power Knob	S	D-22	TRQ1836J	Screw, TRQ2 + 3 × 8A	
C-4	442-634U	Spring, Knob	S	D-23	517-117A	Tape Counter	S
C-5	236-193Q	Window Ass'y Cassette Door (L)	S	D-26	412-250A	Deck Ass'y	S
				D-26-1	419-004G	Deck Mechanism	S
C-5-1	324-300A	Holder, Cassette-Window	S	D-26-2	221-500A	Cover, Cassette Mechanism	S
C-5-2	236-025Q	Window, Cassette-Door-L (A)	S	D-26-3	353-022B	Screw Cassette	S
C-5-3	246-330H	Decoration	S	D-26-4	273-802D	Knob, Cassette Play	S
		Cassette-Door- L (A)	S	D-26-5	273-801S	Knob, Cassette Function (F.F)	S
C-6	236-193P	Window Ass'y Cassette Door (R)	S	D-26-6	273-801T	Knob, Cassette Function (REW)	S
				D-26-7	273-801U	Knob, Cassette Function (Stop/Eject)	S
C-6-1	324-300A	Holder, Cassette-Window	S	D-26-8	273-801V	Knob, Cassette Function (Pause)	S
C-6-2	236-025P	Window, Cassette-Door-R (B)	S				
C-6-3	246-330I	Decoration	S	D-26-13	558-028A	Switch, Auto Tape Sel.	R
		Cassette-Door- R (B)		D-26-14	353-022B	Screw	S
C-7	236-026E	Window, LED	S	D-27	412-250B	Deck Ass'y	S
C-8	251-300H	Plate, Al-Decoration	S	D-27-1	419-004F	Deck Mechanism, GT51FMF-R/P	S
C-9	273-803A	Knob, Synchronous	S	D-27-2	221-500A	Cover, Cassette Mechanism	S
C-10	273-804A	Knob, Dolby	S	D-27-3	353-022B	Screw	S
C-11	273-805A	Knob, Tape Select	S	D-27-4	273-801W	Knob, Cassette Function (REC)	S
C-12	273-513D	Knob, Rotary	S	D-27-5	273-801X	Knob, Cassette Function (Play)	S
C-13	321-900A	Bracket, Jack	S	D-27-6	273-801S	Knob, Cassette-Function (F.F)	S
C-15	TRQ1846J	Screw, TRQ2 + 3 × 20A		D-27-7	273-801T	Knob, Cassette Function (REW)	S
C-16	353-025F	Screw, Special	S	D-27-8	273-801U	Knob, Cassette Function (Stop/Eject)	S
C-17	TCQ1830J	Screw, Tapping TC3 + 3 × 6		D-27-9	273-801V	Knob, Cassette Function (Pause)	S
C-18	TCQ1836J	Screw, TCQ + 3 × 8		D-27-10	451-145E	Belt, Conter	S
C-19	TRQ1830J	Screw, TRQ2 + 3 × 6A		D-29	TRQ2236J	Screw, Tapping TRQ2 + 4 × 8A	
C-20	231-560K	Sheet, Display		D-30	265-027A	Foot	R
D-1	313-502A	Chassis, Bottom	S	D-32	472-610B	Felt	
D-2	256-220A	Plate, Bottom	S	D-33	213-252A	Cabinet	S
D-3	TRQ1836J	Screw, TRQ2 + 3 × 8A		D-34	353-633A	Screw, Special	S
D-4	321-901A	Bracket, PCB	S	D-35	TRQ1836I	Screw, TRQ2 + 3 × 8A	
D-5	TRQ1836J	Screw, TRQ2 + 3 × 8A		D-37	MRC1830J	Screw	
D-6	TRQ1836J	Screw, TRQ2 + 3 × 8A		D-38	353-025B	Screw, Special	S
D-7	333-300A	Lever, Recorder	S	D-39	TCQ1836J	Screw, TCQ + 3 × 8	
D-8	341-020A	Bushing, Lever	R	E-1	313-940B	Chassis, Back	S
D-9	TRQ1836J	Screw, TRQ2 + 3 × 8A		E-2	TRQ1836I	Screw, TRQ2 + 3 × 8A	
D-10	442-620B	Spring, Recorder	S	E-3	324-620A	Holder, Cord	S
D-11	321-421A	Bracket-A, Deck	S	E-4	324-348A	Holder, Cord	S
D-12	TCQ1830J	Screw, Tapping TC3 + 3 × 6		F	511-051D	PCB Ass'y, Main	R
D-13	353-022B	Screw	S	F-170	255-107B	Heat, Sink	
D-14	321-902A	Bracket-B, Deck	S	F-171	TRQ1822J	Screw, TRQ2 + 3 × 4A	
D-15	TCQ1836J	Screw, TCQ + 3 × 8		G	511-053A	PCB Ass'y, Sub	R
D-16	321-904A	Bracket-L, Deck	S	H	511-052D	PCB Ass'y, Mic & Headphone	R
D-17	TRQ1836J	Screw, TRQ2 + 3 × 8A		H-24	324-333A	Holder, LED	S

• DECK MECHANISM (RECORD/PLAYBACK)

Location No.	Part No.	Description	Remark	Location No.	Part No.	Description	Remark
3	99X-0952	Idler Arm (HT) Ass'y	R	55	99X-1170	Drive Belt	R
15	99X-1157	Record Arm	R	64	99X-1011	Cam Spring	R
16	99X-1158	Motor Holder	R	66	99X-1013	Head Chassis Spring	R
17	99X-0968	Button Holder (B)	R	67	99X-1015	Head Spring	R
18	99X-1159	Flywheel Bracket	R	68	99X-1016	P, Roller Spring	R
29	99X-0980	P, Roller Arm Ass'y	R	71	99X-1022	Eject Lever Spring	R
30	99X-0981	T-Reel Ass'y	R	72	99X-1023	Pack Spring	R
31	99X-0982	S-Reel Ass'y	R	84	99X-1036	Leaf SW, LSA-119G/C	R
33	99X-1166	Clutch Arm Ass'y	R	85	99X-1037	Leaf SW, LSA-1120YN	R
36	99X-0985	Gear (C)	R	86	99X-1029	RP Head	R
37	99X-0986	Record Sensor	R	87	99X-1030	Erase Head	R
38	99X-1167	Flywheel Ass'y (S)	R	88	99X-1064	Motor, BFB2L41T	R
39	99X-0988	Lock Arm (H)	R	91	99X-1041	Poly Washer	R
41	99X-1169	Motor Pulley	R	92	99X-1042	Poly Washer	R
42	99X-0989	Eject Lever (F)	R	103	99X-1055	Washer Head Screw	R
43	99X-0990	Button Lever	R	106	99X-1058	Motor Screw	R
48	99X-0997	Auto Arm (B)	R	113	99X-0999	Damper Ass'y	R
50	99X-0976	Bush	R	115	99X-1027	Cassette Case Spring	R
53	99X-1000	Play Idler	R	117	99X-1063	FR Belt	R
54	99X-1001	Auto Belt	R				

• DECK MECHANISM (PLAYBACK)

Location No.	Part No.	Description	Remark	Location No.	Part No.	Description	Remark
3	99X-0952	Idler Arm (HT) Ass'y	R	64	99X-1011	Cam Spring	R
16	99X-1158	Motor Holder	R	66	99X-1013	Head Chassis Spring	R
17	99X-0968	Button Holder (B)	R	67	99X-1015	Head Spring	R
18	99X-1159	Flywheel Bracket	R	68	99X-1016	P Roller Spring	R
29	99X-0980	P Roller Arm Ass'y	R	71	99X-1022	Eject Lever Spring	R
30	99X-0981	T-Reel Ass'y	R	72	99X-1023	Pack Spring	R
31	99X-0982	S-Reel Ass'y	R	84	99X-1036	Leaf SW LSA-1119C/G	R
33	99X-1166	Clutch Arm Ass'y	R	85	99X-1037	Leaf SW LSA-1120YN	R
36	99X-0985	Gear (C)	R	86	99X-1065	R/P Head, HN424971K	R
38	99X-1167	Flywheel Ass'y (S)	R	87	99X-1066	Tape Guide	R
39	99X-0988	Lock Arm (H)	R	88	99X-1064	Motor BFB2L41T	R
41	99X-1169	Motor Pulley	R	91	99X-1041	Poly Washer	R
42	99X-0989	Eject Lever (F)	R	92	99X-1042	Poly Washer	R
43	99X-0990	Button Lever	R	103	99X-1055	Washer Head Screw	R
48	99X-0997	Auto Arm (B)	R	106	99X-1058	Motor Screw	R
50	99X-0976	Bush	R	113	99X-0999	Damper Ass'y	R
53	99X-1000	Play Idler	R	115	99X-1027	Cassette Case Spring	R
54	99X-1001	Auto Belt	R	117	99X-1063	FR Belt	R
55	99X-1170	Drive Belt	R				